Edd Clark & Associates, Inc.
Environmental Consultants

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Feasibility Study/Corrective Action Plan
Novato Ford
6995 Redwood Boulevard
Novato, California
UST File No. 21-0326 (JMJ)

Dear Mr. Bartel:

Please accept the following as Edd Clark & Associates, Inc.'s (EC&A's) Feasibility Study/Corrective Action Plan (FS/CAP) for Novato Ford, 6995 Redwood Boulevard (site) in Novato, California (Figure 1). In their letter dated October 20, 2003, the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) requested a FS/CAP for remediation of fuel hydrocarbon- (FHC-) impacted groundwater in the vicinity of the underground storage tank (UST) formerly located at the site. This FS/CAP includes a summary of the UST removal and soil and groundwater investigations conducted to-date, an assessment of FHC-impacted soil and groundwater, a risk assessment, a remediation feasibility study and cost analysis, and selection of the most cost-effective, feasible remedial alternative for the site. A copy of this FS/CAP will be submitted to the SFBRWQCB for their review and approval. Once the SFBRWQCB has approved of the FS/CAP, a detailed Remedial Action Plan (RAP) should be prepared for the site.

SITE DESCRIPTION

The site is located at 6995 Redwood Boulevard in Novato, California; the nearest cross street is Hill Road (Figure 1). Redwood Boulevard is about 40 feet (ft) east of the site; businesses are located on the east side of Redwood Boulevard. An apartment complex is north of the site; to the northwest is a marsh; and directly to the west is a vacant lot and trailer-storage yard. Southwest and west of the site is WBE, an electric and telecommunications business; to the south is Hill Road and a car wash.

The Novato Ford automobile dealership is located at the site, and consists of paved parking areas, a sales building and service buildings. The former UST was located adjacent to the northwest corner of the main service building (Figure 2). The ground surface in the location of the former UST slopes toward the west. There is a low-lying drainage area, which is about 7 ft to 8 ft below the grade of the Novato Ford property, between the northern boundary of the site and the apartment complex.

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There are no obvious outlets at either end of the drainage area. The drainage area is about 150 ft north of the former UST. Novato Creek, located adjacent to the northern corner of the site, flows to the southeast. At the closest point, Novato Creek is about 300 ft northeast of the former UST.

SUMMARY OF PREVIOUS WORK

UST Removal

On September 22, 1997, one 2000-gallon, tar-wrapped steel UST for gasoline was removed from the site by M.R.L. Underground Tank Testing Inc., of Santa Rosa, California. Reportedly, the UST appeared to be intact, but the tar wrapping on the top of the UST was dissolved and there were FHC odors and floating product in the excavation. Water was observed in the excavation at 9 ft below ground surface (bgs); reportedly, the water appeared to be groundwater, not perched water.

Concentrations of total petroleum hydrocarbons as gasoline (TPHg) or benzene, toluene, ethylbenzene and xylenes (BTEX) were not detected in the soil samples collected from the excavation; however, concentrations of methyl tert-butyl ether (MTBE) ranging from 1.0 milligrams per kilogram (mg/kg) to 5.1 mg/kg were detected. Water sample W1 contained concentrations of TPHg, benzene, and MTBE at 150,000 micrograms per liter (µg/l), 9900 µg/l, and 210,000 µg/l, respectively. Table 1 presents the UST removal sample results.

On May 27, 1998, EC&A personnel characterized for disposal the approximately 20 cubic yards (cu yds) of soil excavated to remove the former UST in September 1997. Analytical results for the stockpile are summarized in Table 2. On July 1, 1998, Dick James Construction, Inc., loaded and hauled the soil to Redwood Landfill in Novato, California, for disposal.

Preliminary Site Investigation

At the request of the SFBRWQCB and the Marin County Office of Waste Management (MCOWM), EC&A personnel directed the advancement of seven soil borings (B-1 through B-7) on September 11, 1998, to assess the extent of FHC-contaminated soil and groundwater in the vicinity of the former UST (Figure 2). A sample of what appeared to be free product was collected from boring B-3 and submitted to the analytical laboratory for a fuel-fingerprint analysis; the sample was identified as resembling gasoline. Only minor amounts of FHCs and related compounds were detected in soil samples. Concentrations of TPHg in grab-groundwater samples from B-1, B-2 and B-4 through B-7 ranged from 92 µg/l to 3000 µg/l; benzene ranged from 0.5 µg/l to 15 µg/l; MTBE ranged from 45 µg/l to 56,000 µg/l. Soil boring soil and grab-groundwater sample analytical results are presented in Tables 3 and 4, respectively. EC&A's January 21, 1999 *Soil and Groundwater Investigation Report* provides additional information on the September 1998 investigation.

Additional Groundwater Investigation and Monitoring Well Installation

To further define the extent of soil and groundwater contamination in the vicinity of the former UST, EC&A directed the drilling of four soil borings (B-8, B-9, B-10 and B-11) and the installation of three 2-inch-diameter groundwater monitoring wells (MW-1, MW-2 and MW-3) on December 2 and

3, 1999, and one 4-inch-diameter extraction well (MW-4) on December 10, 1999 (Figure 2). FHCs were detected only in soil samples collected from extraction well MW-4. Concentrations of TPHg, benzene and MTBE were not detected in groundwater collected from boring B-8 and well MW-2. Minor concentrations of TPHg and/or benzene were detected in groundwater collected from borings B-9, B10 and B-11. TPHg, benzene and MTBE were detected at maximum concentrations in groundwater collected from well MW-4 at 200,000 µg/l, 13,000 µg/l, and 85,000 µg/l, respectively. Soil boring soil sample analytical results are in Table 3. Analytical results for soil boring grab-groundwater samples are in Table 4, and the monitoring well groundwater sample results are in Table 5. EC&A's March 8, 2000 *Report of Soil Boring and Monitoring Well Installation* provides additional information on the December 1999 investigation.

Sensitive Receptor Survey

During March 2000, EC&A personnel performed a Sensitive Receptor Survey (SRS) to identify municipal and private water-supply wells and other potential sensitive receptors in the vicinity of the former UST. EC&A did not identify any active private or municipal water-supply wells during the survey. Residents of two addresses within the search area reported that they had a well on their property, but the wells were abandoned several years ago. The Marin Municipal Water District (MMWD) indicated that there are no municipal supply wells within a 2000-ft radius of the subject site. EC&A's April 25, 2000 *Sensitive Receptor Survey* provides additional information.

Soil Boring and CPT Investigation

On April 1, 2 and 3, 2003, EC&A personnel advanced three shallow exploratory soil borings (B-12, B-13 and B-14) to depths of 11.5 ft, 15 ft and 11.5 ft, respectively, and four Cone Penetrometer Test (CPT) borings (CPT-1, CPT-2, CPT-3 and CPT-4) to approximately 50 ft bgs to assess the extent of the MTBE plume north, west and south of the former UST.

FHCs were not detected in soil samples collected from B-12, B-13 and B-14, nor in the grab-groundwater samples from B-12 and B-13. Only MTBE (0.67 µg/l) and tert-amyl methyl ether (TAME) at 0.85 µg/l were detected in the grab-groundwater sample from B-14. Analytical results for soil samples from borings are in Table 3. Analytical results for grab-groundwater samples from borings are in Table 4.

TPHg and BTEX components were not detected in any of the groundwater samples collected from the CPT borings. MTBE was detected in five of the CPT grab-groundwater samples at concentrations ranging from 4.7 µg/l (CPT-2 at 48 ft bgs) to 510 µg/l (CPT-1 at 18 ft bgs). TAME was detected in CPT-1 (18 ft) and CPT-2 (38 ft) at 13 µg/l and 7.3 µg/l, respectively. Analytical results for the groundwater samples from CPT probes are in Table 4. Logs of the CPT borings are included in Appendix A.

Quarterly Groundwater Monitoring - January 2000 through March 2004

Groundwater samples have been collected 15 times from monitoring wells MW-1, MW-2, MW-3 and extraction well MW-4 from January 2000 to March 2004. Depth to water (DTW) from the top of well casing (TOC) was measured in all of the wells during each monitoring event. In January and

April 2000, DTW was measured twice, approximately 18 hours apart at the estimated low and high tides to assess tidal influence at the site.

DTW from TOC has ranged from approximately 5.09 ft (MW-2, April 2000) to 8.79 ft (MW-1, September 2002). Groundwater elevations have ranged from 2.08 ft relative to mean sea level (msl) up to 5.87 ft msl. Groundwater-flow direction has ranged from S58°W to N89°W. The gradient has ranged from 0.0011 ft/ft (December 2002) to 0.023 ft/ft (February 2001). Groundwater elevation data are in Table 6.

All groundwater samples were analyzed for TPHg and BTEX using EPA Methods 8015m/8020, and for MTBE and other gasoline oxygenates by EPA Method 8260. Free-product was observed in MW-4 during the July and November 2000, February and June 2001, and March and December 2002 sampling events.

Concentrations of TPHg have not been reported in MW-2 and were only reported once in MW-1 (75 µg/l, June 2003). TPHg has been reported 10 times in MW-3 at concentrations ranging from 53 µg/l to 130 µg/l. Concentrations of TPHg up to 280,000 µg/l (September 2002) were detected in MW-4.

Concentrations of benzene have not been reported in MW-2, and were only reported once in MW-1 (2.5 µg/l, June 2003) and twice in MW-3 (0.60 µg/l, January 2000 and 1.7 µg/l, June 2003). Concentrations of benzene up to 13,000 µg/l were detected in well MW-4 (January 2000).

MTBE has been detected in wells MW-1 through MW-3 at concentrations ranging from 1.3 µg/l (MW-2, March 2004) to 2400 µg/l (MW-1, June 2003). In MW-4, MTBE has been detected at concentrations ranging from 50,000 µg/l (June 2003) to 91,000 µg/l (April 2000). TAME has been detected in samples from MW-1, MW-3 and MW-4 at concentrations ranging from 17 µg/l (MW-1) to 18,000 µg/l (MW-4). Tert-butyl alcohol (TBA) has been detected once in MW-1, MW-2 and MW-4 at concentrations ranging from 36 µg/l to 3900 µg/l.

Analytical results for monitoring and extraction well groundwater samples are presented in Table 6. EC&A's groundwater monitoring reports provide detailed information for each event.

Surface-water Sample Collection and Analysis
EC&A collected surface-water samples from the drainage area located approximately 150 ft north of the service center in January, April, July and November 2000 and March 2002. None of the analytes tested for were present in the water samples. Table 7 presents groundwater sample results for samples collected from the drainage area (DA-1).

Product/FHC-impacted Water Removal
Approximately 220 gallons of free-floating product and FHC-impacted water were removed from extraction well MW-4 from July 2000 to December 2003. Product thickness has ranged from approximately 0.016 inch to 0.12 inch. A tar-like substance, probably dissolved tar from the tar-wrapped UST, is on the surface of the product layer. MW-4 has a very slow recharge rate, and is

generally purged dry after about 15 gallons are removed. The drummed product and FHC-contaminated water, as well as drummed purge water from sampling events, have been periodically removed from the site for disposal.

Because the dissolved tar or tar-like substance coats and disables any down-hole equipment, EC&A has purged this well dry with bailers and placed a Peatwick™ absorbent sock in the well to remove the sheen. A Peatwick™ sock with a three-gallon capacity was installed in MW-4 on June 5, 2001. The sock was replaced about every two to four weeks for the first year. Subsequently, the sock has been replaced when the well is sampled.

HYDROGEOLOGY

The site is located about 11 ft above msl. The nearest drainage is a low-lying area, about 7 ft to 8 ft below the grade of the Novato Ford property, located about 150 ft north of the former UST. Although the outlet of this drainage is not apparent, it probably connects to the marshy area located to the northeast of the Novato Ford property. Novato Creek, which flows to the southeast, is approximately 300 ft northwest of the former UST at its closest point. In the vicinity of the site, Novato Creek is influenced by tidal fluctuations in San Pablo Bay, which is about 3 miles east of the site.

Groundwater-flow direction in the vicinity of the former UST is westerly. Evidence of tidal influence on groundwater-flow direction in the vicinity of the former UST was not observed based multiple water-level measurements collected during low and high tides during the January and April 2000 sampling events.

Site Geology

Subsurface materials encountered by EC&A during the investigations conducted to-date consist of fill comprised of baserock, clayey sand, clayey gravel and/or silty gravel to depths ranging from 3 ft to 12 ft. Underlying the fill is Bay Mud, which is mostly comprised of silty clay and sandy clay with thin sand or gravel interbeds. Commonly, what appears to be perched water is encountered in the fill at the contact with the underlying clay. The sand or gravel lenses encountered within the Bay Mud, which vary in thickness and continuity, are generally where first groundwater is encountered at depths ranging from 6 ft to 18 ft. Cross sections of the subsurface geology at the site are shown on Figures 3 through 5. Logs of all soil borings, monitoring wells and CPT borings to-date are in Appendix A

Subsurface materials encountered in the September 1998 and December 1999 soil boring investigations generally consisted of permeable fill to 5 ft to10 ft bgs. Clay with silt and/or sand (Bay Mud) was encountered from about 10 ft to 21.5 ft bgs, the extent of subsurface investigation. A sand lens was encountered in MW-2, and a gravel lens was encountered in MW-3 within the Bay Mud between 20.0 ft to 21.5 ft bgs.

The April 2003 subsurface investigation conducted by EC&A identified three water-producing zones (the shallow groundwater zone, and the A- and B-sands). CPT data suggests that the A-sand is comprised of a mixed sand package encountered at about 30 ft to 38 ft bgs, and extends down to approximately 40 ft bgs. The B-sand appears to be comprised of a mixed sand package encountered at about 42 ft to 46.5 ft bgs, and extends to the maximum depths explored, about 50 ft (Figures 3 and 4).

Groundwater

In September 1998, shallow groundwater was encountered in two zones within the clayey sand above the Bay Mud: one at 5 ft bgs and one at about 10 ft to 14 ft bgs. The uppermost zone appeared to be perched and was not encountered during drilling in boring in B-5; the deeper zone appeared to produce more water. Depth to groundwater in the open borings ranged from 1.25 ft to 8.38 ft.

In December 1999, shallow groundwater was encountered at 6 ft bgs in boring B-8; at 10 ft bgs (top of Bay Mud) in B-11, MW-2, MW-3 and MW-4; and at 14 ft bgs in B-9 and B-10. Groundwater was not encountered in MW-1 when the boring was drilled and the well constructed. DTW in the open borings ranged from 6.5 ft to 14.30 ft.

DTW from TOC has ranged from approximately 5.09 ft (MW-2, April 2000) to 8.79 ft (MW-1, September 2002). Groundwater elevations have ranged from 2.08 ft msl to 5.87 ft msl. Groundwater-flow direction has ranged from S58°W to N89°W. The gradient has ranged from 0.0011 ft/ft (December 2002) to 0.023 ft/ft (February 2001).

The groundwater elevation in extraction well MW-4 has not been used to calculate the groundwater-flow direction and gradient because the groundwater elevation is anomalously high and the presence of a tar-like sheen on groundwater in MW-4 prevents the collection of an accurate water-level measurement.

Figure 6 is a groundwater elevation map for the site on March 3, 2004.

EXTENT OF FHC-CONTAMINATED SOIL AND GROUNDWATER

Extent of FHCs in Soil

FHC-contaminated soil is limited to the vicinity of the former UST location. In the September 1998 investigation, only minor concentrations of FHCs were detected in soil from B-1, B-2, B-4, B-5, B-6, B-7 and MW-4 (the B-3 samples were not analyzed). The highest concentrations of TPHg (12 mg/kg), MTBE (52 mg/kg) and BTEX (up to 1.5 mg/kg) were in soil from extraction well MW-4 at 11 ft bgs (Table 3). In the December 1999 investigation, FHCs were not detected in soil samples collected from B-8, B-9, B-10 and B-11.

In the April 2003 investigation, FHCs were not detected in soil samples collected from B-12, B-13 and B-14.

Maximum concentrations of TPHg and MTBE in soil are shown on Figures 7 and 8.

Extent of FHCs in Shallow Groundwater

MTBE

The lateral extent of the MTBE plume in shallow groundwater is constrained in each direction, except offsite to the north in the vicinity of MW-1, which is located approximately 120 ft to the north of the former UST. In December 2003, MTBE at 1000 µg/l was detected in MW-1. Figure 9 is an isoconcentration contour map of MTBE in shallow groundwater.

It appears that the MTBE plume in shallow groundwater extends offsite beneath Hill Road to the west-southwest of the former UST, as indicated by sample results from CPT-2, B-5 and CPT-1. The extent of the plume to the west-southwest is constrained by non-detect (ND) results in grab-groundwater samples from borings B-12, B-13 and B-8, which are located on the west side of Hill Road. To the northwest, downgradient from the former UST, the extent of the MTBE plume is constrained by ND results in CPT-3, which is located on the northwest corner of the property. To the northeast, east and south, the edge of the MTBE plume is near the locations of B-10, MW-2 and B-14, respectively, which had concentrations at 3.9 µg/l (December 1999), 2.9 µg/l (March 2003), and 0.67 µg/l (April 2003), respectively. The extent of the MTBE plume in shallow groundwater is not defined cross-gradient to the north, as indicated by groundwater results from MW-1 (1000 µg/l, December 2003).

Concentrations of MTBE over 5000 µg/l have been detected in shallow groundwater in B-1, B-5, B-6 and MW-4 in an area approximately 140 ft north-south by 90 ft east-west. The maximum MTBE concentration detected at the site to date is 91,000 µg/l (MW-4, April 2000). In the most recent groundwater sample event (March 2004), MTBE was detected at 2200 µg/l, 1.3 µg/l, 1000 µg/l and 51,000 µg/l in MW-1, MW-2, MW-3 and MW-4, respectively (Table 5).

TAME and TBA

In September 1998, TAME at concentrations of 4200 µg/l, 32 µg/l and 28 µg/l was detected in B-1, B-4 and B-7, respectively. In April 2003, TAME was detected in shallow grab-groundwater samples from B-14 and CPT-1 at 0.67 µg/l and 13 µg/l, respectively. Concentrations of TAME and TBA were detected in MW-1 for the first time in March 2003 at 17 µg/l and 36 µg/l, respectively. TAME and TBA have not been detected in MW-2 since April 2000. TAME has been reported in groundwater from MW-3 ranging from 19 µg/l (December 2002) to 98 µg/l (September 2003); TBA has not been detected in MW-3. Concentrations of TAME and TBA up to 18,000 µg/l and 3900 µg/l, respectively have been detected in MW-4.

TPHg

Low concentrations (below 300 µg/l) of TPHg have been detected in groundwater from B-4 through B-7 and in MW-3. TPHg at 3000 µg/l was detected in B-1. Concentrations of TPHg in MW-3 have ranged from below detection limits (April, July and November 2000, March 2002 and April 2004) to 130 µg/l (September 2002). In MW-4, TPHg concentrations have ranged from 110,000 µg/l (December 2003) to 280,000 (September 2002).

Benzene

Benzene concentrations up to 15 µg/l were detected in B-1 and B-4 through B-7. Benzene has been detected one time in MW-1 (2.5 µg/l in June 2003) and twice in MW-3 (0.60 µg/l in January 2000 and 1.7 µg/l in March 2003). Benzene has not been detected in MW-2. In MW-4, benzene concentrations have ranged from 3300 µg/l (December 2003) to 13,000 µg/l (January 2000).

Deeper Groundwater: A- and B-Sands

MTBE and TAME were the only analytes detected in deeper groundwater samples. In CPT-3, the A-sand was not encountered, and the sample collected from the B-sand was ND for MTBE and TAME. In CPT-4, samples collected from the A- and B-sands had ND results for MTBE and TAME. In CPT-1, because the A- and B-sands appear to be hydraulically connected, only one deep sample was collected at 38 ft bgs: MTBE was detected at 23 µg/l in sample C-1-38.0'. In CPT-2, MTBE was detected in samples collected from both sands (at ~38 ft bgs and ~48 ft bgs) at 180 µg/l and 4.7 µg/l, respectively. TAME, at 7.3 µg/l, was also detected in the A-sand sample from CPT-2 at 38 ft bgs.

The vertical extent of MTBE-impacted groundwater is not completely constrained to the west-southwest of the former UST in the vicinity of CPT-1 and CPT-2. However, although the vertical extent of the B-sand was not explored, it is likely that the vertical extent of MTBE-impacted groundwater is near 50 ft bgs and does not extend below the B-sand, because analytical results indicate MTBE concentrations decrease significantly with depth. In CPT-2, groundwater samples were collected from each water-producing zone: the shallow groundwater zone and the A- and B-sands. Concentrations of MTBE decreased from 270 µg/l to 180 µg/l to 4.7 µg/l from the shallow zone to the A- and B-sands, respectively. MTBE concentrations of 4.7 µg/l are below the California Department of Health Services Maximum Contaminant Level (MCL) of 13 µg/l for public water systems. The shallow grab-groundwater sample from CPT-1 had 510 µg/l MTBE; the deeper grab-groundwater sample collected at 38 ft bgs had 23 µg/l MTBE. Based on geophysical data from CPT-1, the A- and B-sands appear to be hydraulically connected; therefore, only one water sample was collected at depth. Similarly to CPT-2, the analytical results from CPT-1 suggest that concentrations of MTBE significantly decrease with depth. Based on combined data from CPT-1 and CPT-2, it is likely that the lower extent of MTBE-impacted groundwater is near 50 ft bgs.

Figure 10 is an isoconcentration contour map of MTBE in the A- and B-sands.

Estimate of Remaining Mass of FHCs

The quantity of TPHg and MTBE remaining in the soil were calculated by creating isoconcentration contour maps of these materials, using the maximum concentrations measured in each boring and then estimating the volume of impacted soil within each contour interval (Figures 7 and 8). A map for benzene was prepared but not included in the FS/CAP because only one sample had a reportable concentration, MW-4 with 1.4 mg/kg at 10.5 ft bgs: (Table 3). The average concentration of FHCs within each contour interval was assumed to be one half of the value of the higher contour. For the area within the highest contour, the sample with the maximum concentration measured to-date was

used for the average concentration. The thickness of the contaminated zone was assumed to be 10 ft, and the entire zone was assumed to have the average concentration.

TPHg
The results of the calculations show that approximately 19 kilograms (kg) of TPHg remain in the soil at the site (Table 8).

Benzene
The results of the calculations show that approximately 0.5 kilograms (kg) of benzene remain in the soil at the site (Table 8).

MTBE
The results of the calculations show that approximately 108 kg of MTBE remain in the soil at the site (Table 8).

RISK ASSESSMENT

Chemical Identification

The chemicals at the site that pose a potential risk to human health and the environment are those associated with gasoline. A petroleum distillate, gasoline is a complex mixture of hydrocarbons in the range of C4 to C12. Gasoline contains a mixture of substances that are listed as toxic pollutants pursuant to 40 CFR 122.21, Appendix B, Tables II/III/IV, and known to the State of California to cause cancer, birth defects, and other reproductive harm. Benzene is considered the most toxic component of gasoline. Benzene was detected at high concentrations in the former UST excavation and in MW-4, which is the closest well to the former UST. The gasoline oxygenate MTBE has migrated farthest from the source and has been detected at high concentrations in grab-groundwater samples from the former UST excavation, soil borings near the former UST and in MW-1, MW-3 and MW-4.

Potential Exposure Pathways

Buildings/Ground Surface
The site is almost entirely paved and covered by buildings. Human exposure to volatile compounds should not be a concern because of the concrete slab foundation and asphalt paving.

Underground Utilities
Water, storm drains and sanitary sewer lines are located beneath Hill Road, immediately west of the site. When the Sensitive Receptor Survey was conducted, the utility vaults were monitored with an organic vapor analyzer for hydrocarbon vapors; hydrocarbon vapors were not detected. The deepest underground utility line appears to be an 8-inch-diameter sanitary sewer line at approximately 6 ft bgs. Since April 1999 when groundwater monitoring began, the shallowest depth to the water table that has been measured in MW-3, the closest well to Hill Road, is 6.33 ft (April 11, 2000) (Table 6).

Sensitive Receptors
EC&A did not identify any active private or municipal water-supply wells during the March 2000 SRS. Residents of two addresses within the search area reported that they had a well on their property, but the wells were abandoned several years ago. The MMWD indicated that there are no municipal supply wells within a 2000-ft radius of the subject site.

Novato Creek flows beneath Redwood Boulevard about 20 ft from the northeast corner of the site (Figures 1 and 2). At the closest point, Novato Creek is about 300 ft north of the former UST. Two marsh environments were observed directly west and south-southeast of the site. Standing water was observed only in the marsh area south-southeast of the site. There is a low-lying drainage area, which is about 7 ft to 8 ft below grade of the Novato Ford property, between the northern boundary of the site and the apartment complex, about 150 ft northwest of the former UST. There are no obvious outlets at either end of the drainage area. It appears that water is only present in this area during the rainy season.

FEASIBILITY STUDY AND REMEDIAL ALTERNATIVE SELECTION

The following four remedial options were considered for the site:

1. Passive Bioremediation and Groundwater Monitoring
2. Soil Excavation
3. High-vacuum Dual-phase Extraction
4. Ozone Microsparging

Option 1: Passive Bioremediation and Groundwater Monitoring
This alternative minimizes remediation cost by leaving the FHC-contaminated soil and groundwater in-place, and monitoring groundwater quarterly to confirm that MTBE concentrations are stable or continue to decline. The costs for this alternative are estimated to be about $14,150.00 per year. This is the least expensive of the options considered.

Option 2: Soil Excavation
In many circumstances, soil excavation and removal is the most cost-effective method to remediate shallow FHC contamination. Significant soil contamination is restricted to the area surrounding the former UST location. However, only part of the FHC-impacted soil could be removed because of the proximity of the service center on the southeast side. Additionally, the building overhangs part of the former UST location.

The estimated excavated area would extend about 40 ft southwest of the building to the vicinity of B-1, where MTBE concentrations as high as 8.8 mg/kg were reported, at least 40 ft along the building (from near the former UST to northwest of B-3/MW-4 where free product has been observed), and about 16 ft deep. The in-place volume of excavated soil is estimated to be approximately 1200 cu yds, or 1800 tons.

The cost to implement the soil-excavation option is estimated to be approximately $137,322.00. An additional $28,300.00 would be needed for two years of groundwater monitoring to assess the effectiveness of the remediation. These costs do not include costs to treat and dispose of groundwater that will likely enter the excavation.

Alternative 3: High-vacuum Dual Phase Extraction

High-vacuum dual-phase extraction (HVDPE), also known as multi-phase extraction or vacuum-enhanced extraction, is a technology that uses a high-vacuum system to remove various combinations of contaminated groundwater, separate-phase petroleum product, and hydrocarbon vapor from the subsurface, including low-permeability or heterogeneous formations. Extracted liquids and vapor are treated and collected for disposal. Extraction wells are installed at approximately 20-ft intervals within the source area. The extraction wells are screened in the zone of contaminated soils and groundwater, allowing removal of contaminants from above and below the water table. The system lowers the water table around the well, exposing more of the formation. Contaminants in the newly exposed vadose zone are then accessible to vapor extraction. Once above ground, the extracted vapors or liquid-phase organics and groundwater are separated and treated in a groundwater-treatment system. HVDPE systems are effective for remediating gasoline spills, but do not remove diesel fuel and other long-chain hydrocarbons.

Up to 300 gallons per day of extracted water may be beneficially reused in the HVDPE system as make-up water. The remaining water is treated through an onsite treatment process. Most of the hydrocarbon contaminants are removed from the extracted water by use of air sparging and heating while under high vacuum in the inlet tank. The process-treated water is then transferred to a secondary treatment system, which consists of at least two carbon canisters in series. The treated water is pumped into the sewer system. A water meter is placed in line to measure the amount of water being discharged, and a sample port is installed for periodic sampling in accordance with the requirements of the sewer permit. It is expected that contaminated groundwater removal at the rate of up to approximately two to seven gallons per minute may occur which will be treated and discharged to the sewer system. The extraction of large quantities of groundwater may draw FHC-impacted groundwater from offsite sources to the east onto the site.

The estimated cost for this alternative, including the installation of one 4-inch-casing-diameter extraction well, is approximately $140,000.00. An additional $28,300.00 would be needed for two years of groundwater monitoring to assess the effectiveness of the remediation.

Alternative 4: Ozone Microsparging

Ozone microsparging is a process where ozone is introduced into groundwater through specially designed sparge points which distribute small "microbubbles" of ozone in the groundwater. As these microbubbles rise within the column of water, they strip volatile organic compounds (VOCs) and FHCs from the groundwater. Low flow rates (2 to 6 cubic feet per minute) are used. Upon entering the microbubbles, the VOCs are rapidly oxidized to carbon dioxide and water. Any ozone not consumed in direct reaction with hydrocarbons rapidly decomposes to oxygen. This has an added

benefit of stimulating natural biological degradation. Groundwater and vapor are not normally extracted from the subsurface, so waste disposal is not required.

McCulloch Environmental Equipment Sales, Inc. (MEES) of Vacaville, California, estimates that two KVA C-Sparger™ sparge panels and twenty ozone sparge points would be adequate to remediate this site. Fifteen well points would be completed in the sand bed at approximately 15 ft bgs. Five points would be installed in the A-sand bed at a depth of approximately 35 ft to 40 ft. The system would include air compressor, ozone generator, sequencer, solenoids, dual cooling fans, run-timer, outflow one-way check valves, high temperature sensor, and shutdown. The panel units are relatively small and unobtrusive at approximately 3-ft tall, 2-ft wide and 1-ft deep.

Based on information provided to EC&A, ozone injection could relatively quickly and effectively clean up the TPHg and MTBE impacted areas in both soil and groundwater. Previous experience with this method indicates that FHCs in soil and groundwater decrease to closure levels within two years at eighty percent of the sites. Additionally, this method significantly reduces waste soil and water requiring disposal.

The estimated cost for installation, startup, operation and maintenance for one year is approximately $114,866.00. If ozone treatment fails to remediate the free product in MW-4, another remediation alternative may be needed in the vicinity of MW-4. An additional $28,300.00 will be needed for two years of groundwater monitoring to assess the progress of the remediation.

CORRECTIVE ACTION RECOMMENDATION

Alternative No. 1 is the least-expensive alternative. However, it would not address the free product remaining in the vicinity of the former UST location and MTBE contamination of shallow and deep groundwater, and extended groundwater monitoring would be required.

Alternative No. 2 would leave FHC-impacted soil in-place beneath the buildings, would not address MTBE contamination of deep groundwater, and would severely impact business operations.

Alternative No. 3 probably would not remediate the tarry free product near the former UST location and would not address MTBE contamination in deep groundwater.

Of the four remedial alternatives discussed above, EC&A believes that Alternative No. 4, Ozone Microsparging, is the most cost-effective and technologically feasible option for remediating TPHg, benzene and MTBE contamination of shallow and deep groundwater at the site.

Ozone Microsparging considerations are listed below:

Expected Time Frame
Two years.

Advantages

1) Relatively low equipment, operating and maintenance costs.
2) FHCs treated in-situ.
3) Natural biodegradation rates will be enhanced by introduction of oxygen.
4) Will not draw FHCs onto site from offsite.
5) Minimal impact to site operations.
6) Because of low flow rates, vapor extraction is not required to capture off-gassing.
7) Ozone and additional oxygen introduction will also reach capillary fringe areas, and in turn, may possibly affect any areas where vadose soil is impacted.
8) Little or no soil or water wastes requiring disposal.

Groundwater Remediation Goals

The proposed remediation goals for groundwater are as follows:

- Gasoline: 100 µg/l based on the SFBRWQCB risk-based screening level of 100 µg/l for gasoline where groundwater is a current or potential source of drinking water.
- Benzene: 1.0 µg/l based on the California Department of Health Services (CDHS) Maximum Contaminant Level (MCL) for benzene in drinking water of 1.0 µg/l and the SFBRWQCB risk-based screening level of 1.0 µg/l for benzene where groundwater is a current or potential source of drinking water.
- MTBE: 5.0 µg/l based on the CDHS MCL for MTBE in drinking water of 5.0 µg/l and the SFBRWQCB risk-based screening level of 5.0 µg/l for MTBE where groundwater is a current or potential source of drinking water.

Soil Remediation Goals

The proposed remediation goals for soil are as follows:

- Gasoline: 100 mg/kg based on the SFBRWQCB risk-based screening level of 100 mg/kg for gasoline in surface soil where groundwater is a current or potential source of drinking water.
- Residual fuels: 100 mg/kg based on the SFBRWQCB risk-based screening level of 100 mg/kg for residual fuels in surface soil where groundwater is a current or potential source of drinking water.
- Benzene: 0.045 mg/kg based on the SFBRWQCB risk-based screening level of 0.045 mg/kg for benzene in surface soil where groundwater is a current or potential source of drinking water.
- MTBE: 0.028 mg/kg based on the SFBRWQCB risk-based screening level of 0.028 mg/kg for MTBE in surface soil where groundwater is a current or potential source of drinking water.

SCHEDULE

Following regulatory agency review and approval of this FS/CAP, EC&A anticipates that a detailed Remedial Action Plan (RAP) addressing the design and installation of an ozone microsparging

remediation system at the site can be prepared within approximately three to four weeks. The RAP will address specific locations and depths for the proposed sparge points.

LIMITATIONS

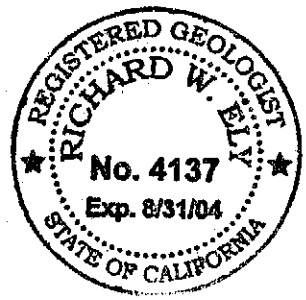
The conclusions presented in this report are professional opinions based on the information presented herein, which includes data generated by others. Whereas EC&A does not guarantee the accuracy of data supplied by third parties, we reserve the right to use this data in formulating our professional opinions. This report is intended only for the indicated purpose and project site. Conclusions and recommendations presented herein apply to site conditions existing at the time of our study. Changes in the conditions of the site property can occur with time because of natural processes or the works of man on the site or adjacent properties. In addition, changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

Thank you for allowing EC&A to provide environmental services for you. Please call if you have any questions.

Sincerely,

John Calomiris
Technical Operations Manager

Richard W. Ely, R.G. #4137
Senior Geologist



Attachments: Figure 1 - Site Location Map
Figure 2 - Site Plan
Figure 3 - Cross Section A-A'
Figure 4 - Cross Section B-B'
Figure 5 - Legend for Geologic Cross Sections
Figure 6 - Groundwater Elevation Map, 03 March 2004
Figure 7 - Maximum Concentrations of TPHg in Soil
Figure 8 - Maximum Concentrations of MTBE in Soil
Figure 9 - MTBE Isoconcentration Map, Shallow Groundwater
Figure 10 - MTBE Isoconcentration Map, A- and B-Sands

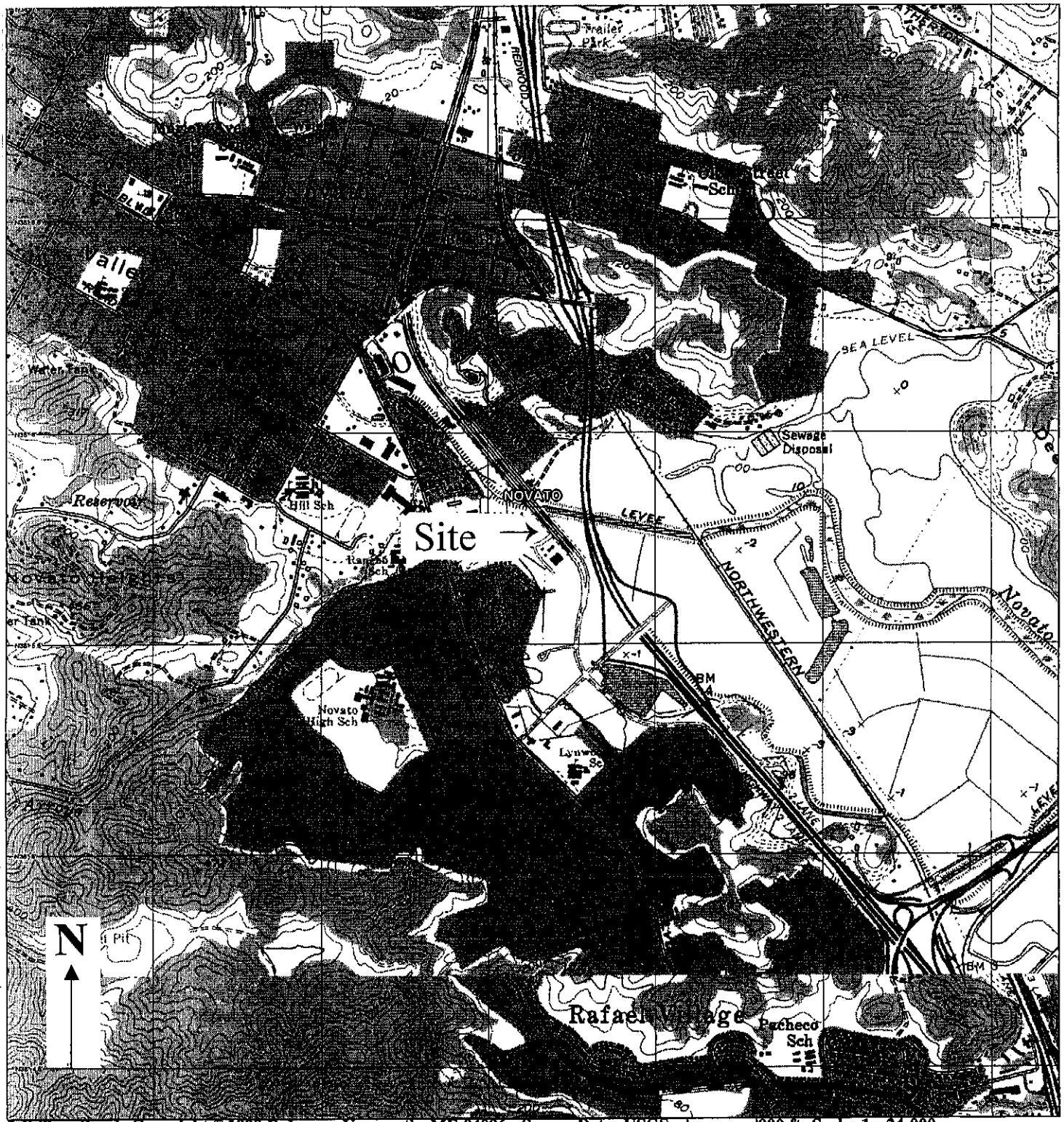
Table 1 - UST Removal Soil and Groundwater Sample Analytical Results - September 22, 1997
Table 2 - Soil Stockpile Sample Analytical Results - May 27, 1998
Table 3 - Soil Boring and Monitoring Well Soil Sample Analytical Results
Table 4 - Soil Boring and CPT Probe Grab-groundwater Sample Analytical Results

Table 5 - Monitoring Well Groundwater Sample Analytical Results
Table 6 - Groundwater Elevation Data
Table 7 - Surface-water Sample Analytical Results
Table 8 - Estimated Mass of FHCs Remaining in Soil

Appendix A - Boring, Well and CPT Logs

cc: John Jang, San Francisco Bay Regional Water Quality Control Board

0306 FS-CAP



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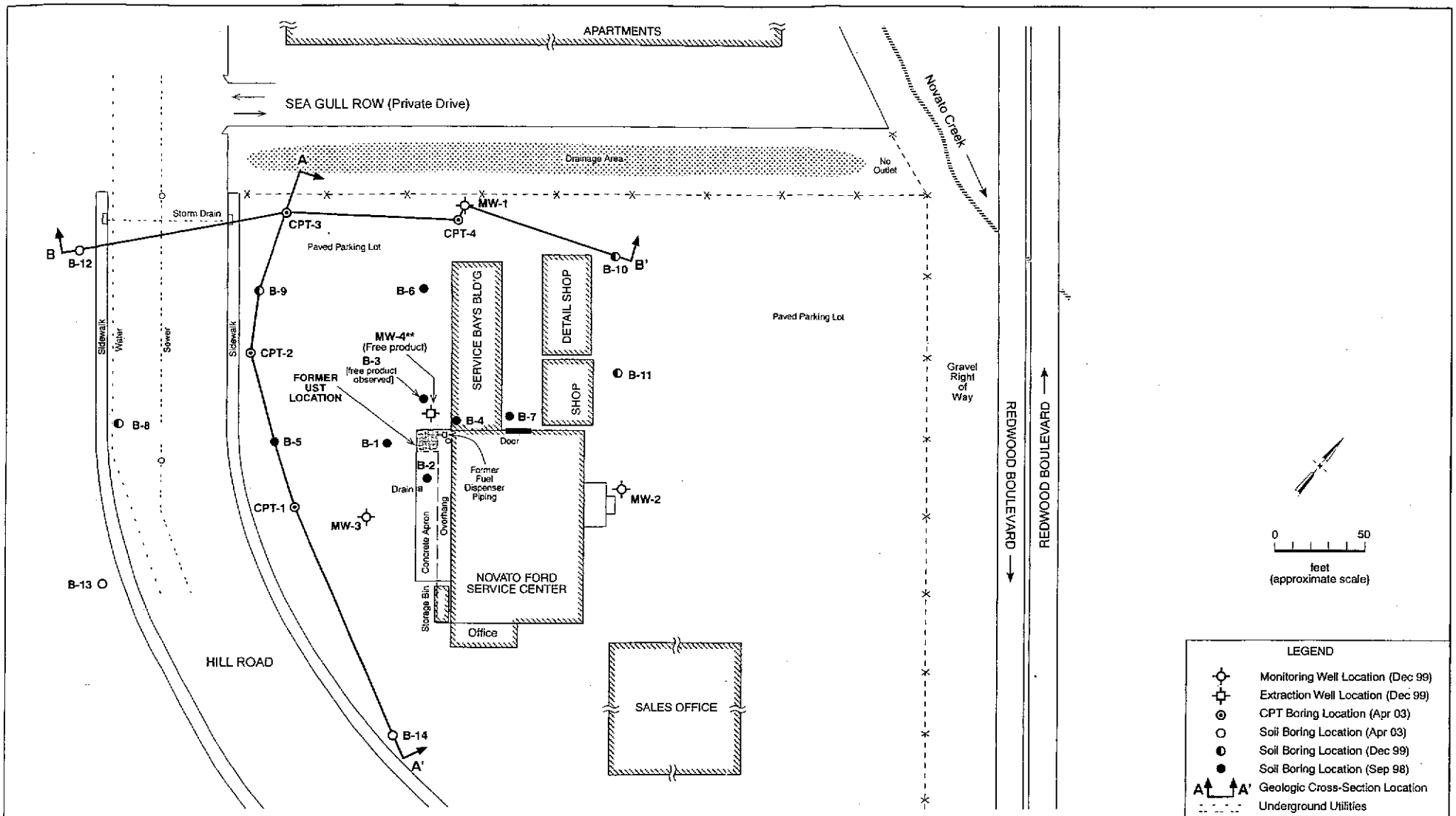
ENVIRONMENTAL CONSULTANTS

Site Location Map
Novato Ford
6995 Redwood Boulevard
Novato, CA

FIGURE
1

JOB NUMBER	REVIEWED BY:	DATE:	REVISED DATE:
0306,001.97	Lori Brown	March 2003	



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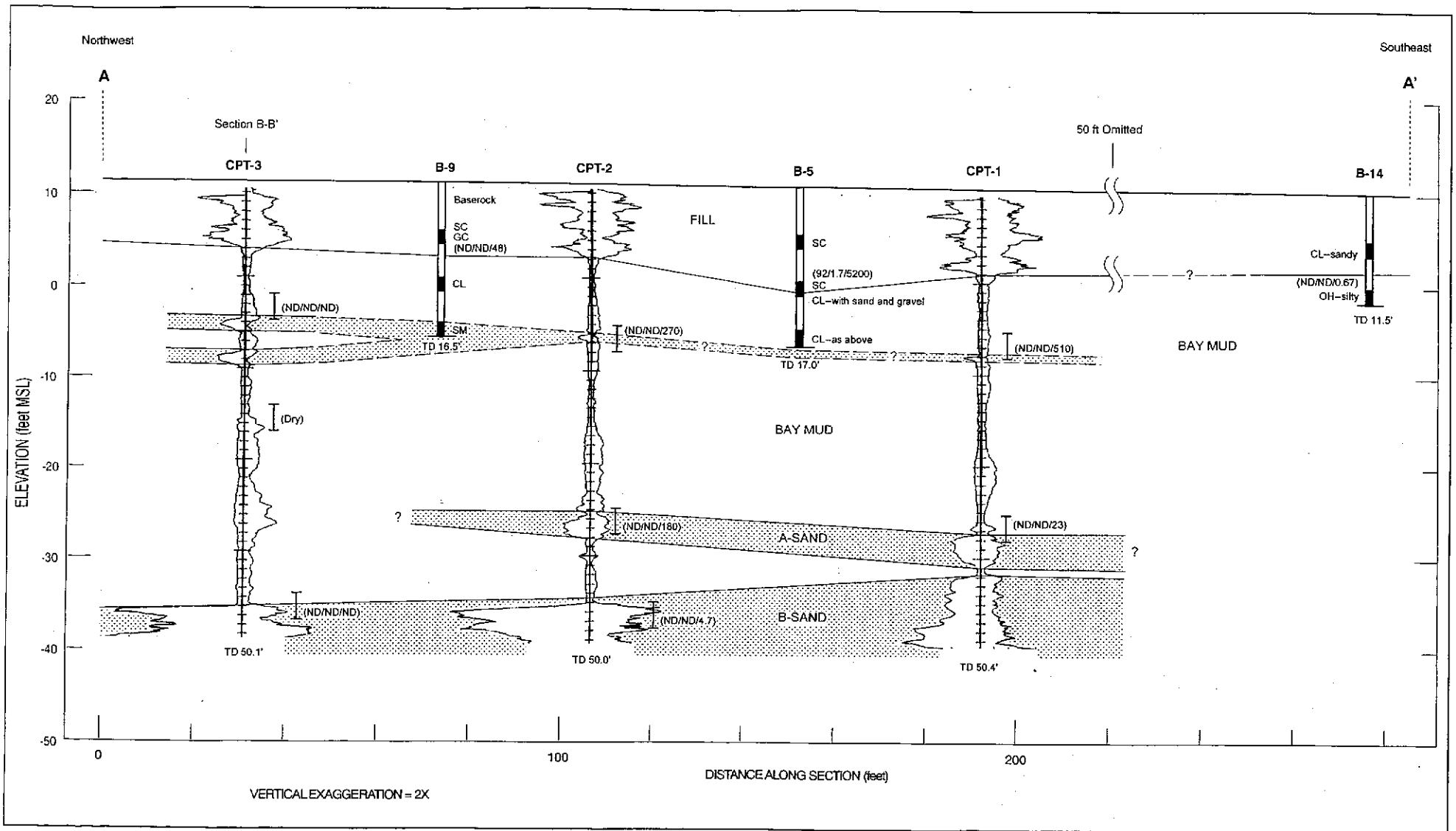
SITE MAP
Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306, 001.97	EC&A, Elizabeth Carruth	June 1999	April 2003	1 of 1

(TRACE #342/ROI/10Mar03)



0 20

Horizontal Scale (feet),
Vertical Exaggeration = 2X

For Cross-Section Location, See Plate 2

For Legend, See Plate 9

(TRACE\042\RG\15May03)

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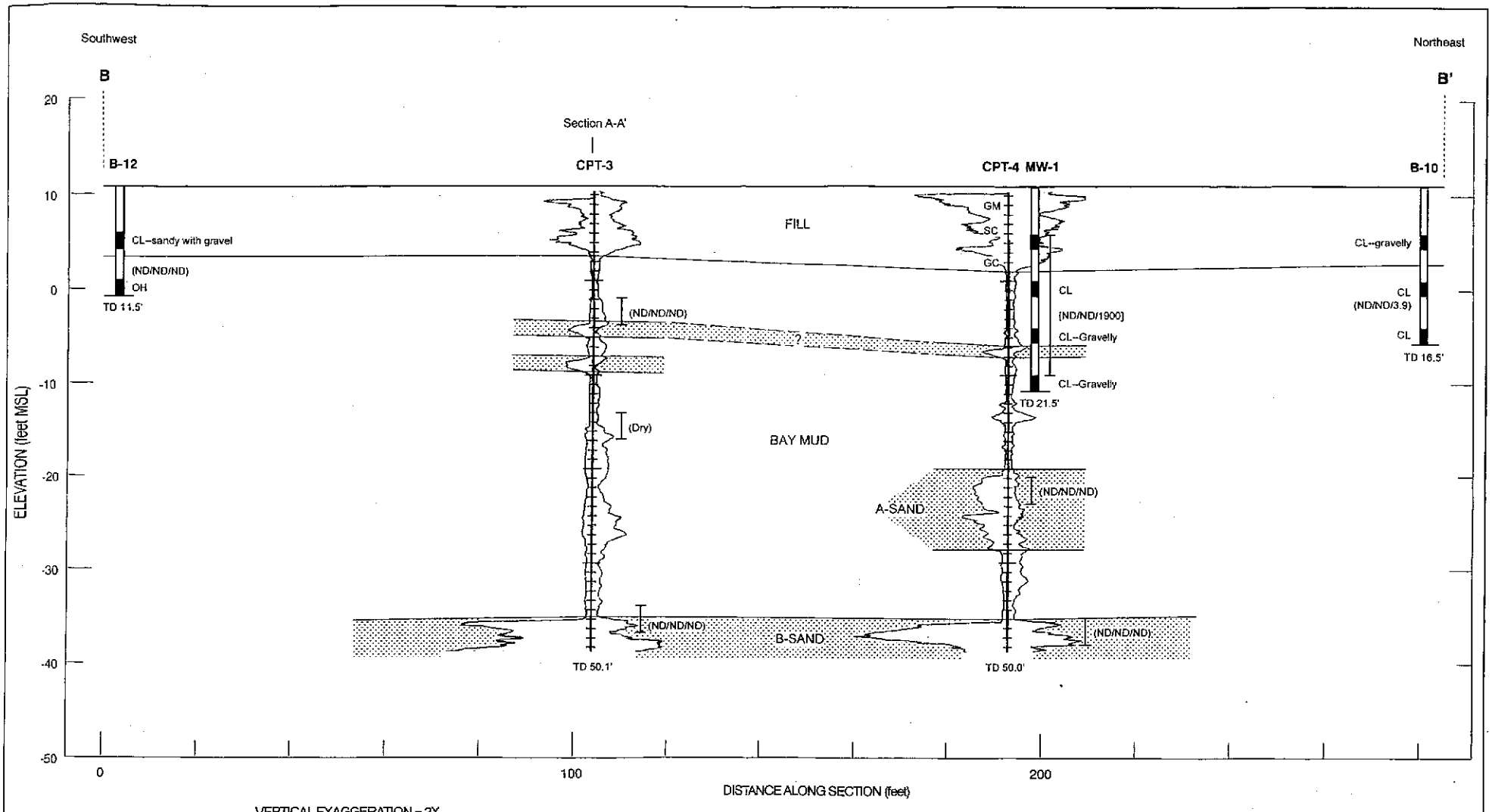
CROSS-SECTION A-A'
Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
0306, 001.97	EC&A, Richard Ely	April 2003	



0 20

Horizontal Scale (feet),
Vertical Exaggeration = 2X

For Cross-Section Location,
See Plate 2

For Legend, See Plate 9

(TRACE#342/RGI/19MAY03)

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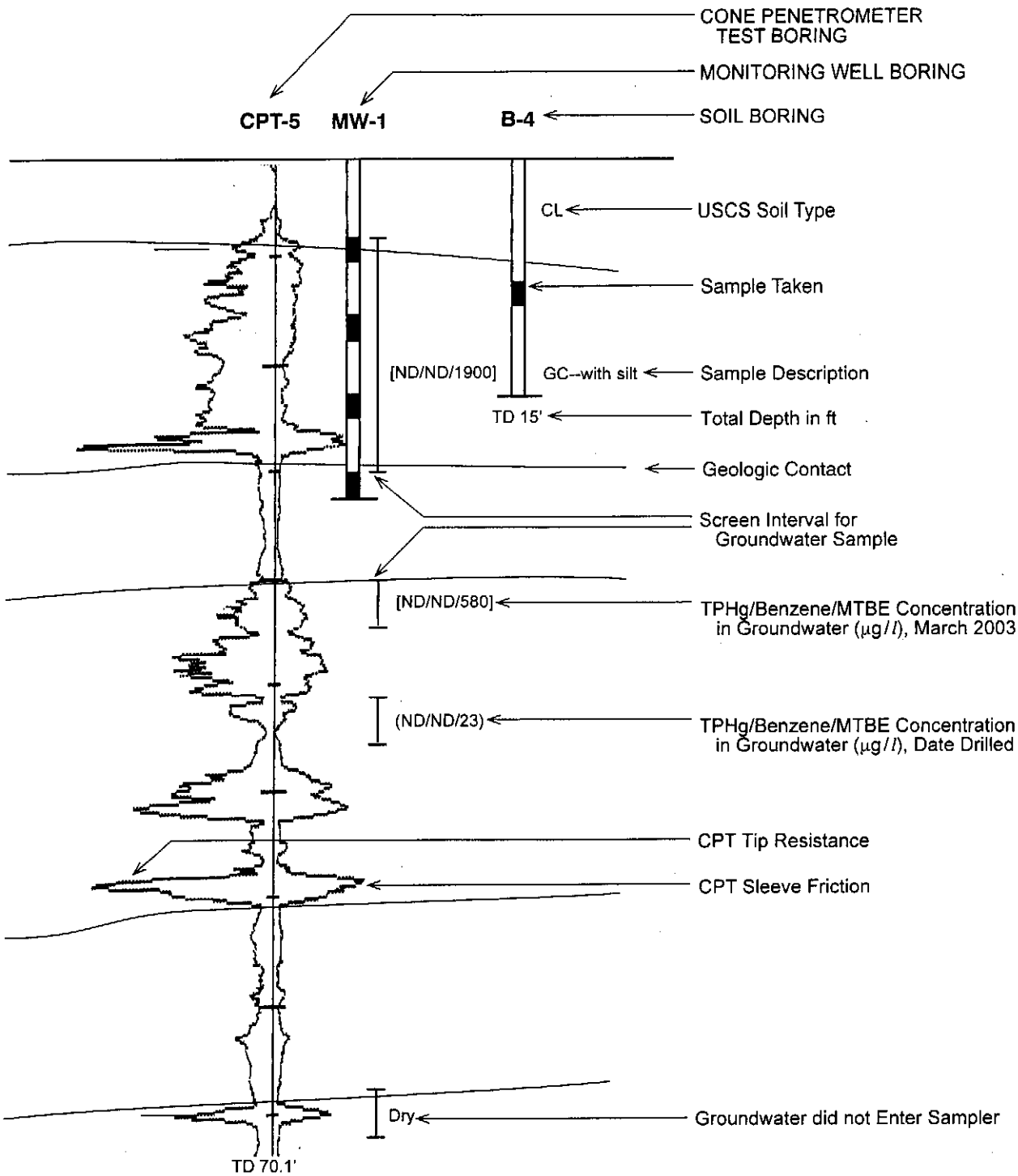
CROSS-SECTION B-B'
Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE
4

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
0306, 001.97	EC&A, Richard Ely	April 2003	



For Unified Soil Classification System, See Plate 6

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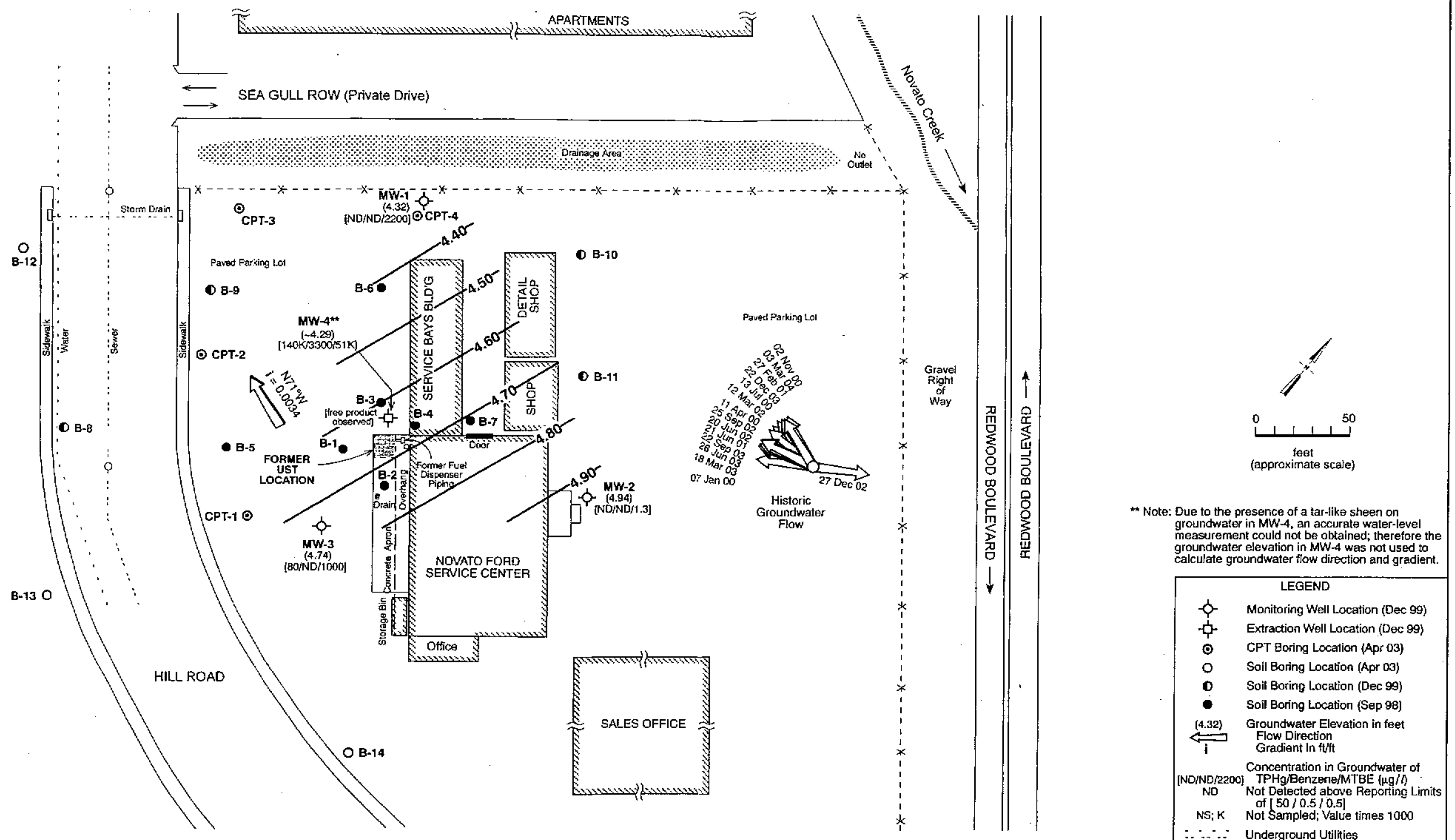
LEGEND FOR GEOLOGIC CROSS SECTIONS

Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE
5

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
0306, 001.97	EC&A, Richard Ely	May 2003	

(TRACE#342/RG/05May03)



** Note: Due to the presence of a tar-like sheen on groundwater in MW-4, an accurate water-level measurement could not be obtained; therefore the groundwater elevation in MW-4 was not used to calculate groundwater flow direction and gradient.

LEGEND

Symbol	Description
	Monitoring Well Location (Dec 99)
	Extraction Well Location (Dec 99)
	CPT Boring Location (Apr 03)
	Soil Boring Location (Apr 03)
	Soil Boring Location (Dec 99)
	Soil Boring Location (Sep 98)
(4.32)	Groundwater Elevation in feet
	Flow Direction
i	Gradient In ft/ft
[ND/ND/2200]	Concentration in Groundwater of TPHg/Benzene/MTBE (µg/l)
ND	Not Detected above Reporting Limits of [50 / 0.5 / 0.5]
NS; K	Not Sampled; Value times 1000
	Underground Utilities

(TRACE #342/RG/19Mar04)

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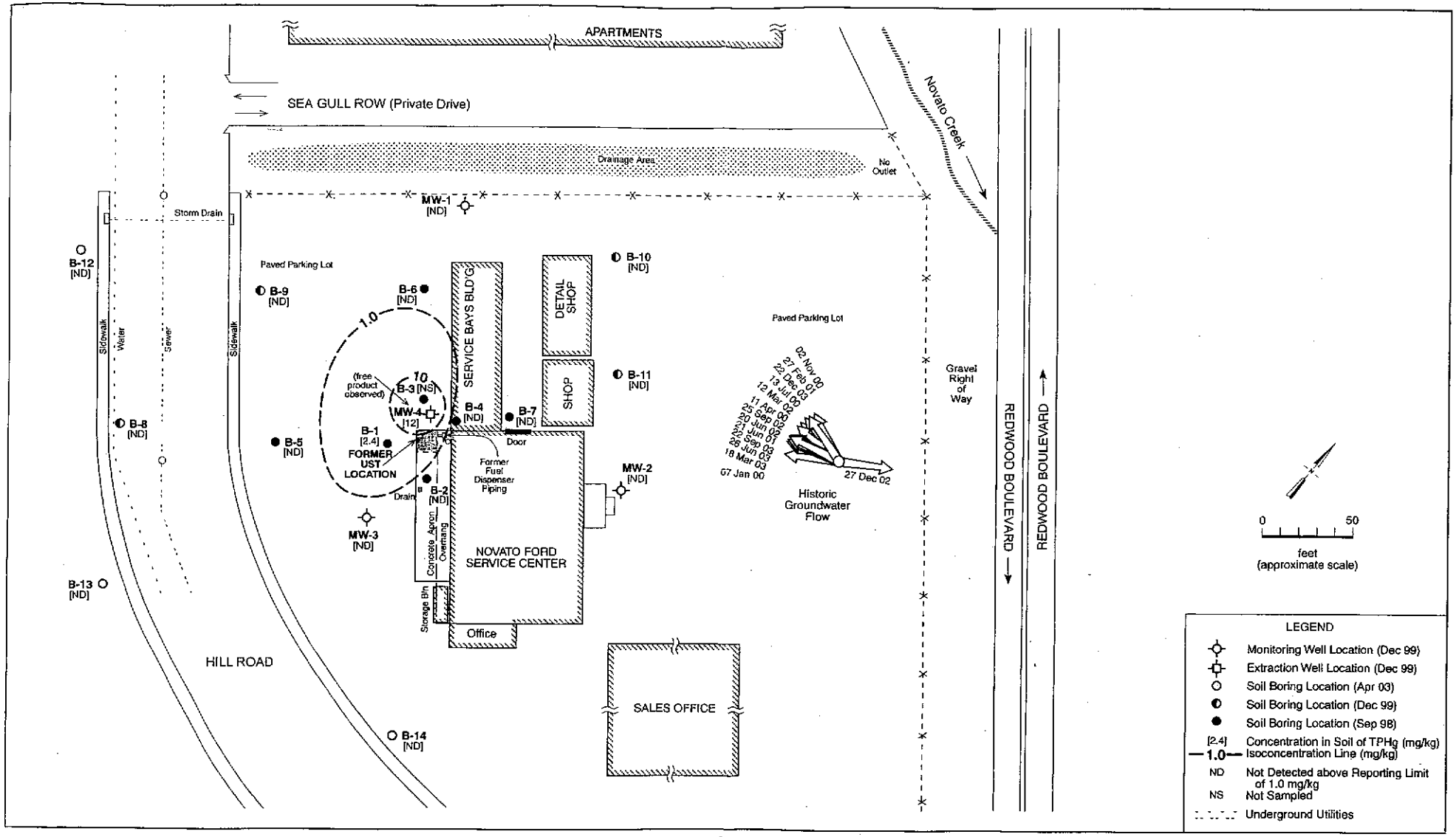
GROUNDWATER ELEVATION MAP
with Sample Analyses, 03 March 2004

Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE 6

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306, 001.97	EC&A, Richard Ely	June 1999	March 2004	1 of 1



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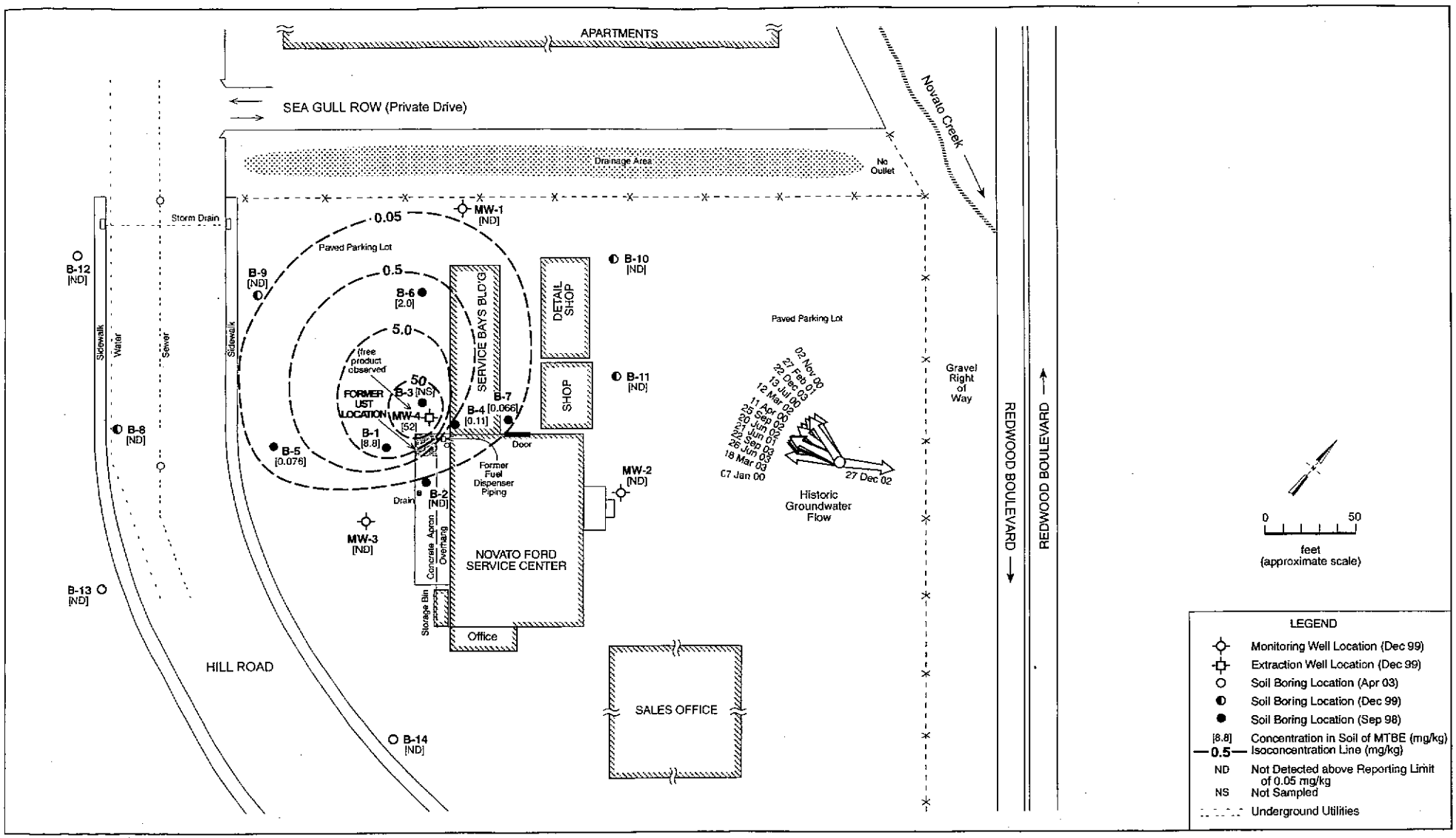
TPHg in SOIL ISOCONCENTRATION MAP

Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE 7

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306, 001.97	EC&A, Richard Ely	March 2004		1 of 1

(TRACE #342/RG/100Mar04)



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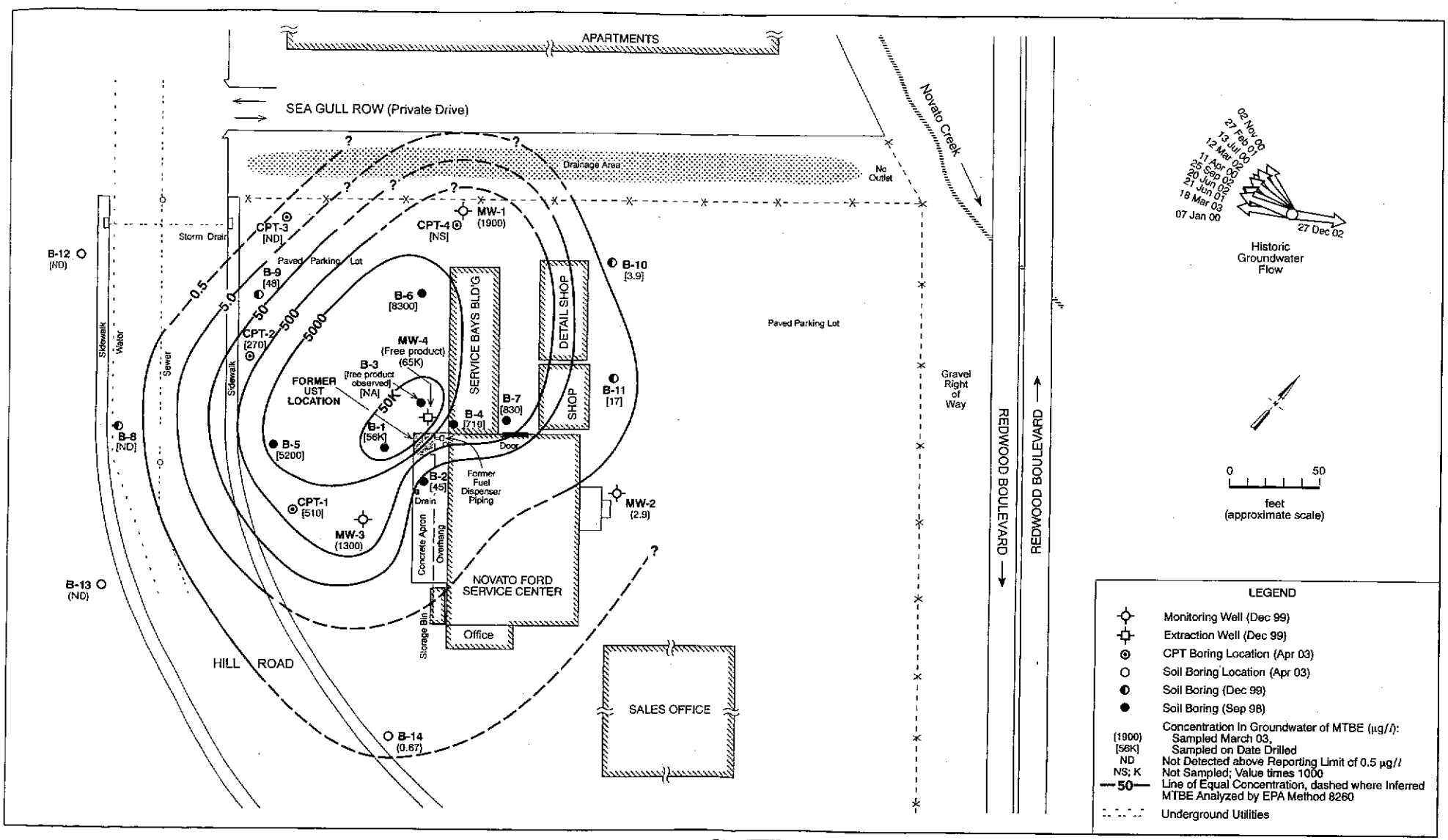
MTBE in SOIL ISOCONCENTRATION MAP

Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE 8

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306, 001.97	EC&A, Richard Ely	March 2004		1 of 1

(TRACE #342/RG/10Mar04)



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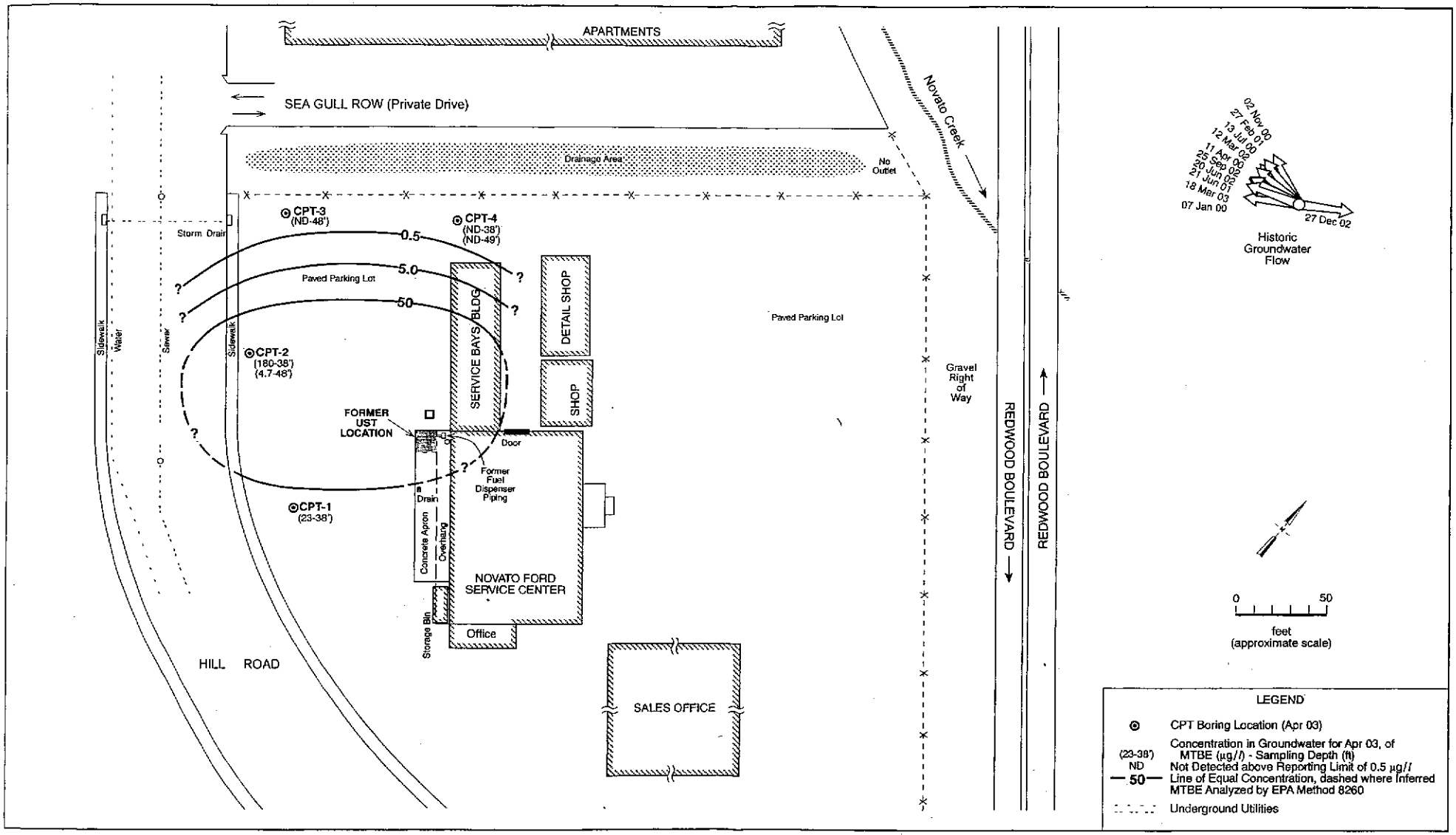
ENVIRONMENTAL CONSULTANTS

MTBE ISOCONCENTRATION MAP,
SHALLOW GROUNDWATER
Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE 9

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306.001.97	EC&A, Lisa Scoralle	April 2003	April 2004	1 of 1

(TRACE #342/RB/08Apr04)



(TRACE #3402/RG0306Apr04)

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MTBE ISOCONCENTRATION MAP,
A and B SANDS
Novato Ford
6995 Redwood Boulevard
Novato, California

FIGURE 10

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306.001.97	EC&A, Lisa Scoralle	April 2003	April 2004	1 of 1

Table 1. UST Removal Soil and Groundwater Sample Analytical Results - September 22, 1997
Novato Ford, 6995 Redwood Boulevard, Novato, California

Sample ID	Media	Depth (bgs)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
W1	Water	9'	150,000 ppb	9,900 ppb	31,000 ppb	3600 ppb	21,000 ppb	210,000 ppb
S2	Soil	92"	ND	ND	ND	ND	ND	1.6 ppm
S3	Soil	84"	ND	ND	ND	ND	ND	1.0 ppm
S4	Soil	78"	ND	ND	ND	ND	ND	5.1 ppm
Reporting Limits for Water			10,000 ppb	100 ppb	100 ppb	100 ppb	200 ppb	5,000 ppb
Reporting Limits for Soil			25 ppm	0.12 ppm	0.12 ppm	0.12 ppm	0.25 ppm	0.62 ppm

TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl ether
bgs: Below ground surface
ppb: Parts per billion
ppm: Parts per million
ND: None detected above the reporting limit

Table 2. Soil Stockpile Sample Analytical Results - May 27, 1998
Novato Ford, 6995 Redwood Boulevard, Novato, California

Sample ID	TPHg mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes mg/kg	Lead mg/kg
SP-1-4	ND<1.0	ND<0.05	ND<0.005	0.011	ND<0.005	0.023	8.1

TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl ether
mg/kg: Milligrams per kilogram
ND: None detected above the reporting limit

Table 3. Soil Boring and Monitoring Well Soil Sample Analytical Results
Novato Ford, 6995 Redwood Boulevard, Novato, California

Sample ID	Sample Date	Depth ft bgs	TPHg mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg
B-1	9/11/98	5.5 - 6.0	ND<1.0	5.5	ND<0.005	0.006	0.008	0.041
B-1	9/11/98	10.5 - 11.0	ND<1.0	3.1	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-1	9/11/98	15.5 - 16.0	2.4 [b,j]	8.8	ND<0.005	0.008	0.012	0.092
B-1	9/11/98	16.5 - 17.0	1.4 [b,j]	7.7	ND<0.005	0.006	ND<0.005	0.035
B-2	9/11/98	6.0 - 6.5	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-2	9/11/98	11.0 - 11.5	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-4	9/11/98	6.0 - 6.5	ND<1.0	0.11	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-5	9/11/98	6.0 - 6.5	ND<1.0	0.11	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-5	9/11/98	10.5 - 11.0	ND<1.0	0.76	ND<0.005	0.006	ND<0.005	0.022
B-6	9/11/98	6.5 - 7.0	ND<1.0	0.80	ND<0.005	0.007	ND<0.005	0.017
B-6	9/11/98	10.5 - 11.0	ND<1.0	2.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-7	9/11/98	6.5 - 7.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-7	9/11/98	16.0 - 16.5	ND<1.0	0.066	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-8	12/2/99	5.5 - 6.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-8	12/2/99	10.5 - 11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-9	12/2/99	10.5 - 11.0 [1]	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-9	12/2/99	15.5 - 16.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-10	12/2/99	10.5 - 11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-10	12/2/99	15.5 - 16.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005

Table 3. Soil Boring and Monitoring Well Soil Sample Analytical Results
Novato Ford, 6995 Redwood Boulevard, Novato, California

Sample ID	Sample Date	Depth ft bgs	TPHg mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg
B-11	12/2/99	6.0 - 6.5	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-11	12/2/99	10.5 - 11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-12d-6.5	04/01/03	6.5	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-12d-11.0	04/01/03	11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-13d-6.0	04/01/03	6.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-13d-11.0	04/01/03	11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-14d-6.0	04/01/03	6.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
B-14d-11.0	04/01/03	11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MW-1	12/2/99	10.5 - 11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MW-1	12/2/99	15.5 - 16.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MW-2	12/3/99	10.5 - 11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MW-3	12/3/99	10.5 - 11.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MW-3	12/3/99	15.5 - 16.0	ND<1.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005
MW-4	12/10/99	10.5 - 11.0	12 [a]	52	1.4	1.2	0.44	1.5
MW-4	12/10/99	11.5 - 16.0	ND<1.0	0.097	ND<0.005	0.008	ND<0.005	0.013

TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl ether analyzed by EPA Method 8020
ft bgs: Feet below ground surface
mg/kg: Milligrams per kilogram

a: Unmodified or weakly modified gasoline is significant
b: Heavier gasoline range compounds are significant (aged gasoline?)
j: No recognizable pattern
1: Sample depth incorrectly reported by analytical laboratory as 10.5 - 16.0 ft

Table 4. Soil Boring and CPT Probe Grab-groundwater Sample Analytical Results
Novato Ford, 6995 Redwood Boulevard, Novato, California

Sample ID	Sample Date	DTW (ft bgs)	TPHg µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	Carbon Disulfide µg/l	Other Oxygenates/ Lead Scavengers
B-1 (W)	9/11/98	4.4	3000 [a,f]	15	18	2.7	12	56,000	4200	NA	ND
B-2 (W)	9/11/98	5.6	ND<50 [i]	ND<0.5	0.64	ND<0.5	ND<0.5	45	ND	NA	ND
B-3 (W) [1]	9/11/98	NA	NA	NA	NA	NA	NA	NA	ND	NA	ND
B-4 (W)	9/11/98	1.25	240 [c,a,i]	15	2.5	7.7	2.7	710	32	NA	ND
B-5 (W)	9/11/98	5	92 [a]	1.7	0.76	0.94	5.4	5200	ND	NA	ND
B-6 (W)	9/11/98	8.38	96 [a,i]	3.2	ND<0.5	ND<0.5	ND<0.5	8300	ND	NA	ND
B-7 (W)	9/11/98	3.3	210 [c,a]	9.1	2.7	1.0	1.1	830	28	NA	ND
B-8(W)	12/02/99	6.5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND	9.1	ND
B-9(W)	12/02/99	7.28	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	48	ND	8.5	ND
B-10(W)	12/02/99	14.30	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.9	ND	11	ND
B-11(W)	12/02/99	8.0	ND<50	0.54	ND<0.5	ND<0.5	ND<0.5	17	ND	ND	ND
B-12W-d11.5	04/01/03	11.5	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	ND
B-13W-d12.5	04/01/03	12.5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	ND
B-14W-d4.5	04/01/03	4.5	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.67	0.85	NA	ND
C-1W-18.0	04/03/03	--	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	510	13	NA	ND
C-1W-38.0	04/03/03	--	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	23	ND<0.5	NA	ND
C-2W-18.0	04/03/03	--	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	270	ND<5.0	NA	ND
C-2W-38	04/03/03	--	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	180	7.3	NA	ND
C-2W-48	04/03/03	--	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.7	ND<0.5	NA	ND

Table 4. Soil Boring and CPT Probe Grab-groundwater Sample Analytical Results
Novato Ford, 6995 Redwood Boulevard, Novato, California

Sample ID	Sample Date	DTW (ft bgs)	TPHg µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	Carbon Disulfide µg/l	Other Oxygenates/ Lead Scavengers
C-3W-15.0	04/03/03	--	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	ND
C-3W-48	04/03/03	--	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	ND
C-4W-34.0	04/02/03	--	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	ND
C-4W-49.0	04/03/02	--	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	ND

DTW: Depth to water
TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl ether; analyzed by EPA Method 8260
TAME: tert-Amyl methyl ether; analyzed by EPA Method 8260
Other Oxygenates/ Lead Scavengers: Analyzed by EPA Method 8260
NA: Not analyzed; or Not-applicable
ND: Not detected at or above the reporting limit
ft bgs: Feet below ground surface
µg/l: Micrograms per liter
a: Unmodified or weakly modified gasoline is significant
c: Lighter gasoline range compounds (the most mobile fraction) are significant
f: One to a few isolated peaks present
i: Liquid sample that contains greater than ~5 vol. % sediment
1: Groundwater sample was analyzed for fuel fingerprint. The results were that the sample contains a significant hydrocarbon pattern between C9 and C12 that resembles gasoline. The hexane solvent peak obscures the lightest portion of this pattern.

Table 5. Monitoring and Extraction Well Groundwater Sample Analytical Results
Novato Ford, 6995 Redwood Boulevard, Novato, California

Well ID	Sample Date	TPHg µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	TBA µg/l
MW-1	01/07/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	170	ND	ND
	04/11/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	440	ND	ND
	07/13/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	580	ND	ND
	11/02/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	380	ND	ND
	02/27/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	350	ND	ND
	06/21/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	710	ND	ND
	03/12/02	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	640	ND	ND
	06/20/02	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	920	ND<25	ND<250
	09/25/02	ND<60 [i,j]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	730	ND<10	ND<100
	12/27/02	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	480	ND<5.0	ND<50
	03/18/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1900 [(2)]	17	36
	06/26/03	75 [a]	2.5	0.97	2.0	5.0	2400	ND<50	ND<500
	09/22/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	530	ND<10	ND<100
	12/22/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1000	ND<25	ND<250
	03/03/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2200	ND<50	ND<500
MW-2	01/07/00	ND<50	ND<0.5	0.58	ND<0.5	ND<0.5	ND<5.0	ND	ND
	04/11/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.1	ND	52
	07/13/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5.6	ND	ND
	11/02/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5.0	ND	ND
	02/27/01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.8	ND	ND

Well ID	Sample Date	TPHg µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	TBA µg/l
MW-2 continued	06/21/01	NS	NS	NS	NS	NS	NS	NS	NS
	03/12/02	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.0	ND	ND
	06/20/02	NS	NS	NS	NS	NS	NS	NS	NS
	09/25/02	ND<50	ND<0.5	ND<0.5	ND<0.5	0.80	2.2	ND<0.5	ND<5.0
	12/27/02	NS	NS	NS	NS	NS	NS	NS	NS
	03/18/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.9	ND<0.5	ND<5.0
	06/26/03	NS	NS	NS	NS	NS	NS	NS	NS
	09/22/03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.6	ND<0.5	ND<5.0
	12/22/03	NS	NS	NS	NS	NS	NS	NS	NS
	03/03/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.3	ND<0.5	ND<5.0
MW-3	01/07/00	69 [f]	0.60	ND<0.5	ND<0.5	ND<0.5	1700	ND	ND
	04/11/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1700	ND	ND
	07/13/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1300	27	ND
	11/02/00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1100	ND	ND
	02/27/01	74 [f]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	970	ND	ND
	06/21/01	94 [f]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1300	ND	ND
	03/12/02	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	990	ND	ND
	06/20/02	93 [f]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2200	65	ND<250
	09/25/02	130 [f]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1800	87	ND<500
	12/27/02	53 [f]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	770	19	ND<170

Table 5. Monitoring and Extraction Well Groundwater Sample Analytical Results
Novato Ford, 6995 Redwood Boulevard, Novato, California

Well ID	Sample Date	TPHg µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	MTBE µg/l	TAME µg/l	TBA µg/l
MW-3 continued	03/18/03	77 [f]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1300	55	ND<5.0
	06/26/03	130 [a]	1.7	1.0	0.97	3.9	1700	85	ND<250
	09/22/03	99 [f]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1600	98	ND<250
	12/22/03	69 [f]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1600	57	ND<250
	03/03/04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1000	54	ND<250
MW-4 [(1)]	01/07/00	200,000 [a,h]	13,000	57,000	4200	24,000	85,000	18,000	ND
	04/11/00	200,000 [a]	11,000	49,000	4000	22,000	91,000	14,000	ND
	07/13/00	NS	NS	NS	NS	NS	NS	NS	NS
	11/02/00	NS	NS	NS	NS	NS	NS	NS	NS
	02/27/01	NS	NS	NS	NS	NS	NS	NS	NS
	06/21/01	230,000 [a,h]	6500	35,000	4800	30,000	60,000	6300	ND
	03/12/02	NS	NS	NS	NS	NS	NS	NS	NS
	06/20/02	170,000 [a]	4900	30,000	4800	26,000	68,000	8700	ND<12,000
	09/25/02	280,000 [a,h]	4700	29,000	7100	39,000	62,000	8500	ND<25,000
	12/27/02	150,000 [a,h]	4100	14,000	3700	26,000	57,000	5000	ND<17,000
	03/18/03	120,000 [a,h]	4400	23,000	4900	27,000	65,000 [(2)]	8400	3900
	06/26/03	200,000 [a,h]	3900	19,000	5100	32,000	50,000	6900	ND<10,000
	09/22/03	140,000 [a,h]	3500	16,000	4300	25,000	55,000	7500	ND<10,000
	12/22/03	110,000 [a,h]	3300	14,000	4300	24,000	55,000	7300	ND<10,000
	03/03/04	140,000 [a,h]	3300	14,000	4600	22,000	51,000	6200	ND<10,000

Notes

TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl; analyzed by EPA Method 8260
TAME: Tert-amyl methyl ether; analyzed by EPA Method 8260
TBA: T-butyl alcohol (tert-butanol); analyzed by EPA Method 8260
µg/l: Micrograms per liter
ND: Not detected above the reporting limit
NS: Not sampled
a: Unmodified or weakly modified gasoline is significant
f: One to a few isolated non-target peaks present
h: Lighter than water immiscible sheen/product is present
i: Liquid sample that contains greater than ~2 vol. % sediment
j: Reporting limit raised due to high MTBE content
1:

Date	Floating Product Thickness Observed in MW-4
07/13/00	0.12 in.
11/02/00	0.05 in.
02/27/01	0.016 in.
06/21/01	0.06 in. (1/16 in.)
03/12/02	0.03 in. (1/32 in.)
12/27/02	0.1 in.
03/18/03	Sheen (< than 1/64 inch)
06/26/03	Sheen (< than 1/64 inch)
09/22/03	Sheen (< than 1/64 inch)
12/22/03	Sheen (< than 1/64 inch)
03/03/04	Sheen (< than 1/64 inch)

2: On March 18, 2003, ethyl tert-butyl ether (ETBE) was detected in MW-1 and MW-4 at 0.64 µg/l and 20 µg/l, respectively

Table 6. Groundwater Elevation Data
Novato Ford, 6995 Redwood Boulevard, Novato, California

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	10.87	01/06/00 [1]	7.96	2.91
MW-2	10.96	01/06/00 [1]	7.44	3.52
MW-3	10.90	01/06/00 [1]	8.02	2.88
MW-4	11.36	01/06/00 [1]	7.96	3.40
Gradient = S60°W, 0.005 ft/ft				
MW-1	10.87	01/07/00 [2]	7.97	2.90
MW-2	10.96	01/07/00 [2]	7.47	3.49
MW-3	10.90	01/07/00 [2]	8.00	2.90
MW-4	11.36	01/07/00 [2]	7.97	3.39
Gradient = S58°W, 0.004 ft/ft				
MW-1	10.87	04/11/00 [3]	6.64	4.23
MW-2	10.96	04/11/00 [3]	5.09	5.87
MW-3	10.90	04/11/00 [3]	6.33	4.57
MW-4	11.36	04/11/00 [3]	5.78	5.58
Gradient = S78°W, 0.011 ft/ft				
MW-1	10.87	04/12/00 [4]	6.65	4.22
MW-2	10.96	04/12/00 [4]	5.18	5.78
MW-3	10.90	04/12/00 [4]	6.34	4.56
MW-4	11.36	04/12/00 [4]	6.15	5.21
Gradient = S78°W, 0.010 ft/ft				
MW-1	10.87	07/13/00	7.26	3.61
MW-2	10.96	07/13/00	6.70	4.26
MW-3	10.90	07/13/00	6.95	3.95
MW-4 [a]	11.36	07/13/00	5.93	5.43
Gradient = N83°W, 0.003 ft/ft*				

Table 6. Groundwater Elevation Data
Novato Ford, 6995 Redwood Boulevard, Novato, California

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	10.87	11/02/00	7.73	3.14
MW-2	10.96	11/02/00	7.53	3.43
MW-3	10.90	11/02/00	7.55	3.35
MW-4 [b]	11.36	11/02/00	7.45	3.96
Gradient = N67°W, 0.0016 ft/ft*				
MW-1	10.87	02/27/01	6.79	4.08
MW-2	10.96	02/27/01	6.48	4.48
MW-3	10.90	02/27/01	6.59	4.31
MW-4 [c]	11.36	02/27/01	6.57	4.79
Gradient = N78°W, 0.023 ft/ft*				
MW-1	10.87	06/21/01	7.83	3.04
MW-2	10.96	06/21/01	5.72	5.24
MW-3	10.90	06/21/01	7.28	3.62
MW-4 [d]	11.36	06/21/01	5.88	5.48
Gradient = S78°W, 0.014 ft/ft*				
MW-1	10.87	03/12/02	7.04	3.83
MW-2	10.96	03/12/02	6.16	4.80
MW-3	10.90	03/12/02	6.68	4.22
MW-4 [e]	11.36	03/12/02	6.81	4.55
Gradient = N89°W, 0.006 ft/ft*				
MW-1	10.87	06/20/02	7.60	3.27
MW-2	10.96	06/20/02	5.61	4.80
MW-3	10.90	06/20/02	7.13	3.77
MW-4	11.36	06/20/02	6.35	5.01
Gradient = S78°W, 0.014 ft/ft*				

Table 6. Groundwater Elevation Data
Novato Ford, 6995 Redwood Boulevard, Novato, California

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	10.87	09/25/02	8.79	2.08
MW-2	10.96	09/25/02	6.63	4.33
MW-3	10.90	09/25/02	8.34	2.56
MW-4	11.36	09/25/02	7.43	3.93
Gradient = S77°W, 0.015 ft/ft*				
MW-1	10.87	12/27/02	7.30	3.57
MW-2	10.96	12/27/02	7.51	3.45
MW-3	10.90	12/27/02	7.30	3.60
MW-4 [f]	11.36	12/27/02	8.02	3.34
Gradient = N57°E, 0.0011 ft/ft*				
MW-1	10.87	03/18/03	6.85	4.02
MW-2	10.96	03/18/03	6.28	4.68
MW-3	10.90	03/18/03	6.83	4.07
MW-4	11.36	03/18/03	6.97	4.39
Gradient = S71°W, 0.0047 ft/ft*				
MW-1	10.87	06/26/03	7.12	3.75
MW-2	10.96	06/26/03	5.16	5.80
MW-3	10.90	06/26/03	6.74	4.16
MW-4	11.36	06/26/03	~6.75	~4.61 **
Gradient = S74°W, 0.013 ft/ft*				
MW-1	10.87	09/22/03	8.57	2.30
MW-2	10.96	09/22/03	6.32	4.64
MW-3	10.90	09/22/03	8.08	2.82
MW-4	11.36	09/22/03	~7.18	~4.18**
Gradient = S77°W, 0.016 ft/ft*				

Table 6. Groundwater Elevation Data
Novato Ford, 6995 Redwood Boulevard, Novato, California

Well ID	TOC Elevation feet msl	Date	Depth to Water feet	Groundwater Elevation feet msl
MW-1	10.87	12/22/03	7.50	3.37
MW-2	10.96	12/22/03	7.37	3.59
MW-3	10.90	12/22/03	7.39	3.51
MW-4	11.36	12/22/03	~7.96	~3.40**
Gradient = N74°W, 0.012 ft/ft*				
MW-1	10.87	03/03/04	6.55	4.32
MW-2	10.96	03/03/04	6.02	4.94
MW-3	10.90	03/03/04	6.16	4.74
MW-4	11.36	03/03/04	~7.07	~4.29**
Gradient = N71°W, 0.0034 ft/ft*				

TOC: Top of casing
feet msl: Measured in feet relative to mean sea level
1: Collected approximately 3.5 hours before low tide relative to the Petaluma River Entrance Station
2: Collected approximately 0.5 hours after low tide relative to the Petaluma River Entrance Station
3: Collected at approximately low tide relative to the Petaluma River Entrance Station
4: Collected at approximately high tide relative to the Petaluma River Entrance Station
Floating product present in well. Depth to product 5.93 feet; product layer thickness measured at 0.01 feet (Keck Interface probe).
b: Floating product present in well. Depth to product 7.45 feet; product layer thickness measured at 0.05 inches (clear bailer).
c: Floating product present in well. Depth to product 6.57 feet; product layer thickness measured at 0.016 inches (clear bailer).
d: Floating product present in well. Depth to product 5.88 feet; product layer thickness measured at 1/16 inches (clear bailer).
e: Floating product present in well. Depth to product 6.81 feet; product layer thickness measured at 1/32 inch (clear bailer).
f: Floating product present in well. Depth to product 8.02; product layer thickness estimated at 0.1 inch (clear bailer).
*: The groundwater elevation in MW-4 is anomalous and was not used to calculate the groundwater-flow direction and gradient.
**: Due to the presence of a tar-like oily sheen on groundwater in MW-4, an accurate water-level measurement could not be made; therefore, groundwater elevation in MW-4 was not used to calculate the groundwater-flow direction and gradient.

Table 7. Surface-water Sample Analytical Results
Novato Ford, 6995 Redwood Boulevard, Novato, California

Sample ID	Sample Date	TPHg µg/l	MTBE µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l
DA-1	01/07/00	ND<50	ND<5.0 [1]	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04/11/00	ND<50	ND<1.0 [2]	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	07/13/00	ND<50	ND<1.0 [2]	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	11/02/00	ND<50	ND<1.0 [2]	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	03/12/02	ND<50	ND<1.0 [2]	ND<0.5	ND<0.5	ND<0.5	ND<0.5

TPHg: Total petroleum hydrocarbons as gasoline
MTBE: Methyl tert-butyl; analyzed by EPA Method 8260
µg/l: Micrograms per liter
ND: Not detected above the reporting limit
1: Sample was also analyzed for fuel oxygenates and lead scavengers by EPA Method 8260. No other analytes were detected above their respective reporting limits.
2: Sample was also analyzed for fuel oxygenates by EPA Method 8260. No other analytes were detected above their respective reporting limits.

0306\table 7 surface

Table 8. Estimated Mass of FHCs Remaining in Soil

Novato Ford, 6995 Redwood Boulevard, Novato, California

MTBE	Contour Interval 1	Contour Interval 2	Contour Interval 3	Contour Interval 4	Total (kg)
Average Concentration (mg/kg)	0.25	2.5	25	52	
Soil Volume (cubic feet)†	164,000	85,400	41,300	8500	
Soil Volume (cubic meters)	4640	2420	1170	241	
Soil Mass (kg)*	10,200,000	5,320,000	2,570,000	529,000	18,600,000
MTBE Mass (kg)	2.55	13.3	64.3	27.5	108

TPHg	Contour Interval 1	Contour Interval 2			Total (kg)
Average Concentration (mg/kg)	5	50			
Soil Volume (cubic feet)†	34,400	11,300			
Soil Volume (cubic meters)	975	320			
Soil Mass (kg)*	2,150,000	705,000			2,860,000
TPHg Mass (kg)	10.7	8.46			19

Benzene	Contour Interval 1	Contour Interval 2			Total (kg)
Average Concentration (mg/kg)	0.25	1.4			
Soil Volume (cubic feet)†	12,000	3100			
Soil Volume (cubic meters)	340	90			
Soil Mass (kg)*	750,000	200,000			950,000
TPHg Mass (kg)	0.2	0.3			0.5

*: Native soil density is assumed to be 2.2 g/cm^3

†: Contamination zone is assumed to be 10 ft thick

APPENDIX A

Boring, Well and CPT Logs

BORING LOCATION	6995 Redwood Blvd, Novato Ford (15 ft west of former UST)	ELEVATION AND DATUM	Ground Surface
BORING NO.	B-1		
DRILLING AGENCY	Clear Heart Drilling , LLC	DRILLER	Ian
DATE STARTED / DATE FINISHED	9 Nov 98 → 9 Nov 98		
DRILLING EQUIPMENT	DR 10K Truck mounted rig	COMPLETION DEPTH	17.0′
SAMPLER	Split Spoon		
DRILLING METHOD	Direct Push	BORING DIA.	2 inches
NO. OF SAMPLES	4 Soil + 1 Grab Groundwater		
SIZE AND TYPE OF CASING	—NA—	FROM — TO —	
WATER LEVEL	FIRST 5′ and 14′ bgs	BEFORE SAMPLE	4.4′ bgs
TYPE OF PERFORATION	—NA—	FROM — TO —	
CORE BARREL	2.0 inch ϕ	LENGTH	18 or 24 inches
SIZE AND TYPE OF PACK	—NA—	FROM — TO —	
LOGGED BY:	JC	CHECKED BY:	CYP
TYPE OF SEAL	NO. 1 —NA—	FROM — TO —	
COMMENTS	Soil samples field screened with GasTechtor Combustion Meter (GT). Results reported in parts per million (ppm).		
	NO. 2 —NA—	FROM — TO —	

DEPTH (feet)	Samples	Sample ID	GT	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt - 2 inches, Base rock fill - 6 inches		
					Clayey SAND (SC), brown (10YR 5/3), moist.	SC	
5			0		▼ Grayish brown (10YR 5/2), wet, little gravel.		
			0		▼ Moist.		
10			0		▼ Moist to very moist, 60% fine-grained sand, 40% clay.		
					Silty CLAY with SAND (Bay Mud-CL), black (N 2.5/), moist to wet, some organic material.	CL	
					? ? ? ▽		
15			0		Clayey SAND (SC), light olive brown (2.5Y 5/4), wet, 70% fine-grained sand, 30% clay.	SC	
			0		Silty CLAY with SAND (Bay Mud-CL), black (N2.5/), moist to very moist.	CL	
20					TD: 17.0 ft bgs Note: Temporary well screen inserted in boring, 1.5 inches of water in bottom of boring. Grab groundwater sample collected at 11:20, DTW 4.4 ft bgs.		

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LOG OF BORING B-1
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	John Calomiris	January 99		1 of 1

BORING LOCATION	6995 Redwood Blvd, Novato Ford (15 ft south of former UST)			ELEVATION AND DATUM: Ground Surface	BORING NO.: B-2
DRILLING AGENCY	Clear Heart Drilling , LLC	DRILLER: Ian		DATE STARTED / DATE FINISHED	9 Nov 98 → 9 Nov 98
DRILLING EQUIPMENT	DR 10K Truck mounted rig			COMPLETION DEPTH: 15.0′	SAMPLER: Split Spoon
DRILLING METHOD	Direct Push	BORING DIA.: 2 inches		NO. OF SAMPLES	2 Soil + 1 Grab Groundwater
SIZE AND TYPE OF CASING	—NA—	FROM — TO —		WATER LEVEL: FIRST 5′ and 11′ bgs	BEFORE SAMPLE: 5.6′ bgs
TYPE OF PERFORATION	—NA—	FROM — TO —		CORE BARREL: 2.0 inch ϕ	LENGTH: 18 or 24 inches
SIZE AND TYPE OF PACK	—NA—	FROM — TO —		LOGGED BY: JC	CHECKED BY: CYP
TYPE OF SEAL NO. 1	—NA—	FROM — TO —		COMMENTS: Soil samples field screened with GasTechtor Combustion Meter (GT). Results reported in parts per million (ppm).	
TYPE OF SEAL NO. 2	—NA—	FROM — TO —			

DEPTH (feet)	Samples	Sample ID	GT	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Concrete - 4 inches, Base rock fill - 6 inches		
					Clayey SAND (SC), brown (10YR 5/3), moist.	SC	
5			0		▼ Dark gray (2.5Y 4/1), wet.		
					▼ Moist.		
10			0		▼ Light olive brown, moist to wet, 60% fine- to coarse-grained sand, 25% clay, 15% gravel to 3/4 in.		
					Silty CLAY with SAND (Bay Mud-CL), black (N 2.5/), very moist, some organic material.	CL	
15					TD: 15.0 ft bgs Note: Grab groundwater sample collected directly from boring at 10:55, DTW 5.6 ft.		
20							

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LOG OF BORING B-2
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 4

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	John Calomiris	January 99		1 of 1

BORING LOCATION	6995 Redwood Blvd, Novato Ford (15 ft north of former UST)			ELEVATION AND DATUM Ground Surface	BORING NO. B-3
DRILLING AGENCY	Clear Heart Drilling , LLC	DRILLER	Ian	DATE STARTED / DATE FINISHED	9 Nov 98 → 9 Nov 98
DRILLING EQUIPMENT	DR 10K Truck mounted rig			COMPLETION DEPTH 6.0′	SAMPLER NA
DRILLING METHOD	Direct Push	BORING DIA.	2 inches	NO. OF SAMPLES	1 Liquid Sample
SIZE AND TYPE OF CASING	—NA—	FROM —	TO —	WATER LEVEL FIRST 5′ bgs	BEFORE SAMPLE 5′ bgs
TYPE OF PERFORATION	—NA—	FROM —	TO —	CORE BARREL NA	LENGTH NA
SIZE AND TYPE OF PACK	—NA—	FROM —	TO —	LOGGED BY: JC	CHECKED BY: CYP
TYPE OF SEAL NO. 1	—NA—	FROM —	TO —	COMMENTS	35% LEL detected in air at about 1 ft bgs in soil boring
TYPE OF SEAL NO. 2	—NA—	FROM —	TO —		

DEPTH (feet)	Samples	Sample ID	GT	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt - 2 inches, Base rock fill - 6 inches		
					Clayey SAND (SC), brown (10YR 5/3), moist.	SC	
5					Product Level → ▽		
					▼ Ten inches of brownish black oily liquid which appeared to be free product.		
					TD: 6.0 ft bgs		
					Note: Sample of liquid collected for product identification.		
10							
15							
20							

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LOG OF BORING B-3
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 5

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	John Calomiris	January 99		1 of 1

BORING LOCATION	6995 Redwood Blvd, Novato Ford (11 ft east of former UST)	ELEVATION AND DATUM	Ground Surface
BORING NO.	B-4		
DRILLING AGENCY	Clear Heart Drilling , LLC	DRILLER	Ian
DATE STARTED / DATE FINISHED	9 Nov 98 → 9 Nov 98		
DRILLING EQUIPMENT	DR 10K Truck mounted rig	COMPLETION DEPTH	7.0′
SAMPLER	Split Spoon		
DRILLING METHOD	Direct Push	BORING DIA.	2 inches
NO. OF SAMPLES	1 Soil + 1 Grab Groundwater		
SIZE AND TYPE OF CASING	—NA—	FROM — TO —	
WATER LEVEL	FIRST 3′ bgs	BEFORE SAMPLE	15 inches bgs
TYPE OF PERFORATION	—NA—	FROM — TO —	
CORE BARREL	2.0 inch ϕ	LENGTH	24 inches
SIZE AND TYPE OF PACK	—NA—	FROM — TO —	
LOGGED BY:	JC	CHECKED BY:	CYP
TYPE OF SEAL	NO. 1 —NA—	FROM — TO —	
COMMENTS			
	NO. 2 —NA—	FROM — TO —	

DEPTH (feet)	Samples	Sample ID	GT	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt - 1 inch, Base rock fill - 6 inches		
					Clayey SAND with GRAVEL (SC), light olive brown (2.5Y 5/4), very moist.	SC	
					▼ Wet.		
5					▼ Moist, less gravel, more clay.		
					▼ Damp.		
					TD: 7.0 ft bgs		
					Note: Grab groundwater sample collected at 12:55, DTW 15 inches.		
10							
15							
20							

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LOG OF BORING B-4
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE
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JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	John Calomiris	January 99		1 of 1

BORING LOCATION	6995 Redwood Blvd, Novato Ford (75 ft west of former UST)	ELEVATION AND DATUM	Ground Surface
BORING NO.	B-5		
DRILLING AGENCY	Clear Heart Drilling , LLC	DRILLER	Ian
DATE STARTED / DATE FINISHED	9 Nov 98 → 9 Nov 98		
DRILLING EQUIPMENT	DR 10K Truck mounted rig	COMPLETION DEPTH	17.0′
SAMPLER	Split Spoon		
DRILLING METHOD	Direct Push	BORING DIA.	2 inches
NO. OF SAMPLES	3 Soil + 1 Grab Groundwater		
SIZE AND TYPE OF CASING	—NA—	FROM — TO —	
WATER LEVEL	FIRST 10′ bgs	BEFORE SAMPLE	5′ bgs
TYPE OF PERFORATION	—NA—	FROM — TO —	
CORE BARREL	2.0 inch ϕ	LENGTH	18 or 24 inches
SIZE AND TYPE OF PACK	—NA—	FROM — TO —	
LOGGED BY:	JC	CHECKED BY:	CYP
TYPE OF SEAL NO. 1	—NA—	FROM — TO —	
COMMENTS	Soil samples field screened with GasTechtor Combustion Meter (GT). Results reported in parts per million (ppm).		
TYPE OF SEAL NO. 2	—NA—	FROM — TO —	

DEPTH (feet)	Samples	Sample ID	GT	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt - 3 inches, Base rock fill - 4 inches		
					Clayey SAND (SC), light olive brown (2.5Y 5/4), slightly moist.	SC	
5			0		▼ Gray (2.5Y 6/1), very moist.		
					▼ Light olive brown (2.5Y 1/4), some gravel to 3/4 inch.		
10			0		▼ Wet.		
					Silty CLAY with SAND and GRAVEL (Bay Mud-CL), very dark gray (N 3/) with grayish-green mottling, very moist, some organic material, some gravel to 3/4 inch.	CL	
15			0				
					TD: 17.0 ft bgs Note: Temporary well screen inserted in boring, grab groundwater sample collected at 16:03, DTW 5 ft bgs.		
20							

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LOG OF BORING B-5
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE
7

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	John Calomiris	January 99		1 of 1

BORING LOCATION	6995 Redwood Blvd, Novato Ford (75 ft north of former UST)	ELEVATION AND DATUM	Ground Surface
		BORING NO.	B-6
DRILLING AGENCY	Clear Heart Drilling , LLC	DRILLER	Ian
DATE STARTED / DATE FINISHED	9 Nov 98 → 9 Nov 98		
DRILLING EQUIPMENT	DR 10K Truck mounted rig	COMPLETION DEPTH	17.0′
SAMPLER	Split Spoon		
DRILLING METHOD	Direct Push	BORING DIA.	2 inches
NO. OF SAMPLES	3 Soil + 1 Grab Groundwater		
SIZE AND TYPE OF CASING	—NA—	FROM — TO —	
WATER LEVEL	FIRST 5′and 10′ bgs	BEFORE SAMPLE	8.38′ bgs
TYPE OF PERFORATION	—NA—	FROM — TO —	
CORE BARREL	2.0 inch ϕ	LENGTH	18 or 24 inches
SIZE AND TYPE OF PACK	—NA—	FROM — TO —	
LOGGED BY:	JC	CHECKED BY:	CYP
TYPE OF SEAL NO. 1	—NA—	FROM — TO —	
COMMENTS	Soil samples field screened with GasTechtor Combustion Meter (GT). Results reported in parts per million (ppm).		
TYPE OF SEAL NO. 2	—NA—	FROM — TO —	

DEPTH (feet)	Samples	Sample ID	GT	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt - 3 inches, Base rock fill - 4 inches		
					Clayey SAND (SC), light olive brown (2.5Y 5/4), slightly moist.	SC	
5			0		▼ Dark gray, wet, becomes light olive brown (2.5Y 5/4) with some gravel at 5.5 ft.		
					▼ Damp.		
					▼ Wet.		
10			0		Silty CLAY with SAND and GRAVEL (Bay Mud-CL), very dark gray (N 3/), very moist, some organic material, some gravel to 3/4 inch.	CL	
15			0				
					TD: 17.0 ft bgs Note: Temporary well screen inserted in boring, grab groundwater sample collected at 14:45, DTW 8.38 ft bgs.		
20							

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LOG OF BORING B-6
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 8

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	John Calomiris	January 99		1 of 1

BORING LOCATION	6995 Redwood Blvd, Novato Ford (40 ft west of former UST)	ELEVATION AND DATUM	Ground Surface
BORING NO.	B-7		
DRILLING AGENCY	Clear Heart Drilling , LLC	DRILLER	Ian
DATE STARTED / DATE FINISHED	9 Nov 98 → 9 Nov 98		
DRILLING EQUIPMENT	DR 10K Truck mounted rig	COMPLETION DEPTH	17.0′
SAMPLER	Split Spoon		
DRILLING METHOD	Direct Push	BORING DIA.	2 inches
NO. OF SAMPLES	2 Soil + 1 Grab Groundwater		
SIZE AND TYPE OF CASING	—NA—	FROM — TO —	
WATER LEVEL	FIRST 5′ and 10′ bgs	BEFORE SAMPLE	3.3′ bgs
TYPE OF PERFORATION	—NA—	FROM — TO —	
CORE BARREL	2.0 inch ϕ	LENGTH	18 or 24 inches
SIZE AND TYPE OF PACK	—NA—	FROM — TO —	
LOGGED BY:	JC	CHECKED BY:	CYP
TYPE OF SEAL	NO. 1 —NA— FROM — TO —	COMMENTS	Soil samples field screened with GasTechtor Combustion Meter (GT). Results reported in parts per million (ppm).
	NO. 2 —NA— FROM — TO —		

DEPTH (feet)	Samples	Sample ID	GT	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt - 3 inches, Base rock fill - 6 inches		
5			0		Clayey GRAVEL (GC), dark gray (5Y 4/1) with olive brown mottling, very moist to wet. ▼ Moist	GC	
10					▼ Greenish gray (5GY 5/1), wet.		
15			0		Silty CLAY with SAND (Bay Mud-CL), very dark gray (N 3/1), very moist.	CL	
20					TD: 17.0 ft bgs Note: Boring filled in to 15 ft. Temporary well screen inserted at 15 ft, grab groundwater sample collected at 16:27, DTW 3.3 ft bgs.		

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LOG OF BORING B-7
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 9

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	John Calomiris	January 99		1 of 1

BORING LOCATION	6995 Redwood Blvd, Novato Ford (40 ft west of former UST)			ELEVATION AND DATUM Ground Surface	BORING NO. B-7
DRILLING AGENCY	Clear Heart Drilling , LLC	DRILLER	Ian	DATE STARTED / DATE FINISHED	9 Nov 98 → 9 Nov 98
DRILLING EQUIPMENT	DR 10K Truck mounted rig			COMPLETION DEPTH 17.0′	SAMPLER Split Spoon
DRILLING METHOD	Direct Push	BORING DIA.	2 inches	NO. OF SAMPLES	2 Soil + 1 Grab Groundwater
SIZE AND TYPE OF CASING	—NA—	FROM —	TO —	WATER LEVEL FIRST 5′ and 10′ bgs	BEFORE SAMPLE 3.3′ bgs
TYPE OF PERFORATION	—NA—	FROM —	TO —	CORE BARREL 2.0 inch ϕ	LENGTH 18 or 24 inches
SIZE AND TYPE OF PACK	—NA—	FROM —	TO —	LOGGED BY: JC	CHECKED BY: CYP
TYPE OF SEAL NO. 1	—NA—	FROM —	TO —	COMMENTS	Soil samples field screened with GasTechtor Combustion Meter (GT). Results reported in parts per million (ppm).
TYPE OF SEAL NO. 2	—NA—	FROM —	TO —		

DEPTH (feet)	Samples	Sample ID	GT	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt - 3 inches, Base rock fill - 6 inches		
5			0		Clayey GRAVEL (GC), dark gray (5Y 4/1) with olive brown mottling, very moist to wet.	GC	
10					▼ Greenish gray (5GY 5/1), wet.		
15			0		Silty CLAY with SAND (Bay Mud-CL), very dark gray (N 3/1), very moist.	CL	
					TD: 17.0 ft bgs Note: Boring filled in to 15 ft. Temporary well screen inserted at 15 ft, grab groundwater sample collected at 16:27, DTW 3.3 ft bgs.		
20							

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LOG OF BORING B-7
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 9

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	John Calomiris	January 99		1 of 1

BORING LOCATION	6995 Redwood Blvd. (west side of Hill Road near curb)	ELEVATION AND DATUM	Ground level
BORING NO.	B-8		
DRILLING AGENCY	Clear Heart, LLC	DRILLER	Rick
DATE STARTED / DATE FINISHED	2 Dec 99 → 2 Dec 99		
DRILLING EQUIPMENT	DR 10K Truck-mounted Drill Rig	COMPLETION DEPTH	16.5 ft
SAMPLER	CA Modif. Split Spoon		
DRILLING METHOD	Solid Flight Auger	BORING DIA.	4 inch O.D.
NO. OF SAMPLES	3 Soil and 1 Grab Groundwater		
SIZE AND TYPE OF CASING	—	FROM — TO —	WATER LEVEL: FIRST 6.0 ft bgs; MEASURED / SAMPLED 6.5 ft bgs
TYPE OF PERFORATION	—	FROM — TO —	CORE BARREL 2.5" ϕ; LENGTH 18 inches
SIZE AND TYPE OF PACK	—	FROM — TO —	LOGGED BY: JC; CHECKED BY: CYP
TYPE OF SEAL	NO. 1 —	FROM — TO —	COMMENTS: Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm). Blows by 40 lb hammer, 40 inch drop.
	NO. 2 —	FROM — TO —	

DEPTH (feet)	Samples	Sample ID	PID	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt and base rock.		
					SILTY SAND (SM) with clay, dark yellowish brown (10YR 4/4), moist.	SM	
					SAND (SP), light olive brown (2.5Y 5/3), moist, 90% fine-grained sand, 10% fines.	SP	
5		6.0	0	2	▼ Very loose, wet.		
10		11.0	0	3	SILTY CLAY (CL), dark gray (N4 /), moist, soft, 70% clay, 30% silt.	CL (Bay Mud)	
15		16.5	0	5			
					TD: 16.5 ft bgs Note: Groundwater sample B-8(w) collected 0930 hr, DTW 6.5 ft bgs.		
20							

(TRACE #179/RG/9Mar00)

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LOG OF SOIL BORING B-8

Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 4

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	EC&A, Cheri Page	February 2000		1 of 1

BORING LOCATION: 6995 Redwood Blvd. (northwest corner of lot)		ELEVATION AND DATUM: Ground level	BORING NO.: B-9
DRILLING AGENCY: Clear Heart, LLC	DRILLER: Rick	DATE STARTED / DATE FINISHED: 2 Dec 99 → 2 Dec 99	
DRILLING EQUIPMENT: DR 10K Truck-mounted Drill Rig		COMPLETION DEPTH: 16.5 ft	SAMPLER: CA Modif. Split Spoon
DRILLING METHOD: Solid Flight Auger	BORING DIA.: 4 inch O.D.	NO. OF SAMPLES: 3 Soil and 1 Grab Groundwater	
SIZE AND TYPE OF CASING: —	FROM — TO —	WATER LEVEL: FIRST 14.0 ft bgs	MEASURED / SAMPLED: 6.8 ft bgs
TYPE OF PERFORATION: —	FROM — TO —	CORE BARREL: 2.5" ϕ	LENGTH: 18 inches
SIZE AND TYPE OF PACK: —	FROM — TO —	LOGGED BY: JC	CHECKED BY: CYP
TYPE OF SEAL: NO. 1 —	FROM — TO —	COMMENTS: Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm). Blows by 40 lb hammer, 40 inch drop.	
NO. 2 —	FROM — TO —		

DEPTH (feet)	Samples	Sample ID	PID	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt, base rock, and fill.		
					CLAYEY SAND (SC), pale yellow (2.5Y 0/3), damp, 60% fine-grained sand, 40% clay; becomes light olive gray at 4 ft. Perched water (very little at 5 ft).	SC	
5		6.5	0	12	CLAYEY GRAVEL (GC), dark olive gray (5Y 3/2), moist, stiff, 60% gravel, 30% clay, 10% fine-grained sand. ▼	GC	
					CLAY (CL) with sand, very dark gray (5Y 3/1), moist, soft, 80% clay, 20% fine-grained sand.	CL (Bay Mud)	
10		11.0	0	3	▼ Brown mottling, very moist, organic material. ▽		
15		16.0	0		SILTY SAND (SM), very dark gray (5Y 3/1), wet, 80% fine- to coarse-grained sand, 20% silt.	SM	
					TD: 16.5 ft bgs		
					Note: Temporary well screen inserted into boring. Groundwater sample B-9(w) collected 1111 hr, DTW 6.8 ft bgs.		
20							

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LOG OF SOIL BORING B-9
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 5

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	EC&A, Cheri Page	February 2000		1 of 1

(TRACE #179/RG/9Mar00)

BORING LOCATION	6995 Redwood Blvd. (northeast corner of detail shop)	ELEVATION AND DATUM	Ground level
BORING NO.	B-10		
DRILLING AGENCY	Clear Heart, LLC	DRILLER	Rick
DATE STARTED / DATE FINISHED	2 Dec 99 → 2 Dec 99		
DRILLING EQUIPMENT	DR 10K Truck-mounted Drill Rig	COMPLETION DEPTH	16.5 ft
SAMPLER	CA Modif. Split Spoon		
DRILLING METHOD	Solid Flight Auger	BORING DIA.	4 inch O.D.
NO. OF SAMPLES	3 Soil and 1 Grab Groundwater		
SIZE AND TYPE OF CASING	—	FROM — TO —	WATER LEVEL FIRST 14.0 ft ?
MEASURED / SAMPLED	14.3 ft bgs		
TYPE OF PERFORATION	—	FROM — TO —	CORE BARREL 2.5" ϕ
LENGTH	18 inches		
SIZE AND TYPE OF PACK	—	FROM — TO —	LOGGED BY: JC
CHECKED BY:	CYP		
TYPE OF SEAL NO. 1	—	FROM — TO —	COMMENTS: Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm). Blows by 40 lb hammer, 40 inch drop.
TYPE OF SEAL NO. 2	—	FROM — TO —	

DEPTH (feet)	Samples	Sample ID	PID	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt and base rock.		
					CLAYEY SAND (SC), light olive brown (2.5Y 5/6), damp, 70% fine-grained sand, 30% clay.	SC	
					▼ Very little perched water at 5 ft bgs.		
5		6.5		41	GRAVELLY CLAY (CL), light olive brown (2.5Y 5/6), damp, very stiff, 50% clay, 30% gravel (gravel lens at 6.5 ft), 20% fine-grained sand.	CL	
10		11.0		7	Clay (CL), very dark gray (5Y 3/1), moist, medium stiff.	CL (Bay Mud)	
					?		
15		16.0			▼ Dark gray (N4 /) with olive brown mottling, organic material.		
					TD: 16.5 ft bgs		
					Note: Temporary well screen inserted into boring. Groundwater sample B-10(w) collected 1530 hr, DTW 14.3 ft bgs, very little water.		
20							

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LOG OF SOIL BORING B-10
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 6

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	EC&A, Cheri Page	February 2000		1 of 1

(TRACE #179/RG/9Mar00)

BORING LOCATION: 6995 Redwood Blvd. (northwest corner of lot)		ELEVATION AND DATUM: Ground level	BORING NO.: B-11
DRILLING AGENCY: Clear Heart, LLC	DRILLER: Rick	DATE STARTED / DATE FINISHED: 2 Dec 99 → 2 Dec 99	
DRILLING EQUIPMENT: DR 10K Truck-mounted Drill Rig		COMPLETION DEPTH: 16.5 ft	SAMPLER: CA Modif. Split Spoon
DRILLING METHOD: Solid Flight Auger	BORING DIA.: 4 inch O.D.	NO. OF SAMPLES: 2 Soil and 1 Grab Groundwater	
SIZE AND TYPE OF CASING: —	FROM — TO —	WATER LEVEL: FIRST 10.0 ft bgs	MEASURED / SAMPLED: 8.0 ft bgs
TYPE OF PERFORATION: —	FROM — TO —	CORE BARREL: 2.5" ϕ	LENGTH: 18 inches
SIZE AND TYPE OF PACK: —	FROM — TO —	LOGGED BY: JC	CHECKED BY: CYP
TYPE OF SEAL: NO. 1 —	FROM — TO —	COMMENTS: Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm). Blows by 40 lb hammer, 40 inch drop.	
NO. 2 —	FROM — TO —		

DEPTH (feet)	Samples	Sample ID	PID	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt and base rock.		
					SANDY CLAYEY GRAVEL (GM). [Fill]	GM	
					CLAYEY GRAVEL (GC), light olive brown (2.5Y 5/4), damp, dense, 50% gravel, 30% clay, 20% fine-grained sand.	GC	
5		6.5	0	33	▼ Perched water (very little) at 5 ft. Moist.		
10		11.0	0		CLAY (CL), very dark gray (5Y 3/1) with black mottling, wet, organic material.	CL (Bay Mud)	
15			0				
					TD: 16.5 ft bgs		
					Note: Groundwater sample B-11(w) collected 1745 hr from open boring, DTW 8.0 ft bgs.		
20							

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LOG OF SOIL BORING B-11
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 7

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	EC&A, Cheri Page	February 2000		1 of 1

(TRACE #1798/RG/9Mar00)

BORING LOCATION	6995 Redwood Blvd. (NW edge of Hill Rd, 9 ft to sidewalk)			ELEVATION AND DATUM Ground Surface	BORING NO. B-12
DRILLING AGENCY	Clear Heart, Inc.	DRILLER	Don	DATE STARTED / DATE FINISHED	01 Apr 03 → 01 Apr 03
DRILLING EQUIPMENT	Deep Rock DR10K Truck-Mounted Rig			COMPLETION DEPTH 11.5 ft	SAMPLER CA Modified Split Spoon
DRILLING METHOD	Solid Flight Auger	BORING DIA.	4 inches O.D.	NO. OF SAMPLES	2 Soil, 1 Grab Groundwater
SIZE AND TYPE OF CASING	—	FROM —	TO —	WATER LEVEL FIRST ~11 ft	MEASURED / SAMPLED DTW 11 ft
TYPE OF PERFORATION	—	FROM —	TO —	CORE BARREL 2.0 inch ϕ	LENGTH 18 inches
SIZE AND TYPE OF PACK	—	FROM —	TO —	LOGGED BY: EAC	CHECKED BY: RWE
TYPE OF SEAL NO. 1	—	FROM —	TO —	COMMENTS Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm).	
TYPE OF SEAL NO. 2	—	FROM —	TO —		

DEPTH (feet)	Samples	Sample ID	Blows	PID (ppm)	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
5		6.5	12	0	SANDY CLAY (CL) with Gravel, dark yellowish-brown (10YR 4/6), wet; ~55% clay, ~30% fine- to coarse-grained sand, ~15% angular gravel up to 0.75 inch dia. [Fill]	CL	
10		11.0	8	0	SILTY CLAY (OH) with Sand, greenish-black (GLEY-1 5GY), saturated, very soft; ~50% clay, ~45% silt, ~5% fine-grained sand; organic rich. ▼ ▽	OH	
					TD: 11.5 ft bgs Note: Grab groundwater sample collected at ~11 ft bgs at 1030 hr.		
15							
20							

EDD CLARK & ASSOCIATES, INC.
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LOG OF SOIL BORING B-12

Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306, 001.97	EC&A, Elizabeth Carruth	April 2003		1 of 1

(TRACE #342/RG/08Apr03)

BORING LOCATION	6995 Redwood Blvd. (~150 ft SW of MW-3, 10.5 ft to sidewalk)	ELEVATION AND DATUM	Ground Surface
BORING NO.	B-13		
DRILLING AGENCY	Clear Heart, Inc.	DRILLER	Don
DATE STARTED / DATE FINISHED	01 Apr 03 → 01 Apr 03		
DRILLING EQUIPMENT	Deep Rock DR10K Truck-Mounted Rig	COMPLETION DEPTH	15.0 ft
SAMPLER	CA Modified Split Spoon		
DRILLING METHOD	Solid Flight Auger	BORING DIA.	4 inches O.D.
NO. OF SAMPLES	2 Soil, 1 Grab Groundwater		
SIZE AND TYPE OF CASING	—	FROM — TO —	
WATER LEVEL	FIRST NA	MEASURED / SAMPLED	DTW 12.5 ft
TYPE OF PERFORATION	—	FROM — TO —	
CORE BARREL	2.0 inch ϕ	LENGTH	18 inches
SIZE AND TYPE OF PACK	—	FROM — TO —	
LOGGED BY:	EAC	CHECKED BY:	RWE
TYPE OF SEAL	NO. 1 — FROM — TO —		
COMMENTS	Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm).		
	NO. 2 — FROM — TO —		

DEPTH (feet)	Samples	Sample ID	Blows	PID (ppm)	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
5		6.0	27	0	CLAYEY GRAVEL (GC) with Sand, light olive-brown (2.5Y 5/6), moist; ~50% angular gravel up to 1.5 inch dia., ~30% clay, ~20% fine- to coarse-grained sand [Fill]	GC	
10		11.0	4	0	SILTY CLAY (OH), greenish-black (GLEY-1 5GY), saturated, very soft; ~60% clay, ~40% silt; organic rich. ▼ ▽	OH	
15					TD: 15.0 ft bgs Note: Temporary well screen installed, grab groundwater sample collected at ~12.5 ft bgs at 1535 hr.		
20							

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LOG OF SOIL BORING B-13

Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 4

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306, 001.97	EC&A, Elizabeth Carruth	April 2003		1 of 1

(TRACE #342/RG/29Apr03)

BORING LOCATION	6995 Redwood Blvd. (~120 ft SE of MW-3, 4 ft to sidewalk)	ELEVATION AND DATUM	Ground Surface / BORING NO. B-14
DRILLING AGENCY	Clear Heart, Inc. / DRILLER Don	DATE STARTED / DATE FINISHED	01 Apr 03 → 01 Apr 03
DRILLING EQUIPMENT	Deep Rock DR10K Truck-Mounted Rig	COMPLETION DEPTH	11.5 ft / SAMPLER CA Modified Split Spoon
DRILLING METHOD	Solid Flight Auger / BORING DIA. 4 inches O.D.	NO. OF SAMPLES	2 Soil, 1 Grab Groundwater
SIZE AND TYPE OF CASING	— FROM — TO —	WATER LEVEL	FIRST ~8 ft / MEASURED / SAMPLED DTW 4.5 ft
TYPE OF PERFORATION	— FROM — TO —	CORE BARREL	2.0 inch ϕ / LENGTH 18 inches
SIZE AND TYPE OF PACK	— FROM — TO —	LOGGED BY:	EAC / CHECKED BY: RWE
TYPE OF SEAL NO. 1	— FROM — TO —	COMMENTS	Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm).
TYPE OF SEAL NO. 2	— FROM — TO —		

DEPTH (feet)	Samples	Sample ID	Blows	PID (ppm)	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Approx. 3 inches of asphalt.		
5	■	6.0	20	0	SANDY CLAY (CL) with Gravel, light olive-brown (2.5Y 5/4), very moist to wet, medium dense; ~50% clay, ~30% fine- to coarse-grained sand, ~20% angular gravel up to 1.0 inch dia. [Fill]	CL	
10	■	11.0	4	0	SILTY CLAY (OH) with Sand, greenish-black (GLEY-1 5GY), saturated, very soft; ~50% clay, ~45% silt, ~5% fine-grained sand; strong organic odor.	OH	
					TD: 11.5 ft bgs Note: Grab groundwater sample collected at ~4.5 ft bgs at 0925 hr.		
15							
20							

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LOG OF SOIL BORING B-14

Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 5

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306, 001.97	EC&A, Elizabeth Carruth	April 2003		1 of 1

(TRACE #342/RGI/08/Apr03)

BORING LOCATION	6995 Redwood Blvd. (north of former UST next to fence)	ELEVATION AND DATUM	10.87 ft TOC
BORING NO.	MW-1		
DRILLING AGENCY	Clear Heart, LLC	DRILLER	Don
DATE STARTED / DATE FINISHED	2 Dec 99 → 3 Dec 99		
DRILLING EQUIPMENT	DR 10K Truck-mounted Drill Rig	COMPLETION DEPTH	21.5 ft
SAMPLER	CA Modified Split Spoon		
DRILLING METHOD	Hollow Stem Auger	BORING DIA.	8 inch O.D.
NO. OF SAMPLES	4 Soil		
SIZE AND TYPE OF CASING	2-inch PVC	FROM 0.0' TO 20.0'	
WATER LEVEL	FIRST None	MEASURED / SAMPLED	None/None
TYPE OF PERFORATION	0.01 Slotted	FROM 5.0' TO 20.0'	
CORE BARREL	2.5"/1.5" ϕ	LENGTH	18 inches
SIZE AND TYPE OF PACK	#2/12 Sand	FROM 4.0' TO 21.5'	
LOGGED BY:	JC	CHECKED BY:	CYP
TYPE OF SEAL	NO. 1 Bentonite	FROM 2.0' TO 4.0'	
COMMENTS	Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm). Blows by 40 lb hammer, 40 inch drop.		
	NO. 2 Cement Grout	FROM 0.0' TO 2.0'	

DEPTH (feet)	Samples	Sample ID	PID	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt, 5 inches thick.		Christy Box
					SANDY CLAYEY GRAVEL (GM), yellow (10YR 5/6). [Fill]	GM	Grout
							Bentonite
5		6.5	0	31	CLAYEY SAND (SC), olive gray (5Y 5/2), very moist to wet.	SC	2" PVC
					CLAYEY SANDY GRAVEL (GC), olive gray (5Y 5/2), damp, dense.	GC	
10		11.0	0	11	CLAY (CL), very dark gray (5Y 3/1) with brown mottling, moist, stiff, organic material.	CL (Bay Mud)	0.010 Well Screen
15		16.0		9	▼ Dark gray (N 4/), 20% gravel.		Sand
20				7			
					TD: 21.5 ft bgs		
					Note: Boring dry on 2 Dec 99. Well installed from grade to 20 ft bgs on 3 Dec 99.		

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LOG OF MONITORING WELL MW-1

Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 8

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	EC&A, Cheri Page	February 2000		1 of 1

(TRACE #179/RG/9Mar00)

BORING LOCATION	6995 Redwood Blvd. (east side of service bldg near stairs)			ELEVATION AND DATUM: 10.96 ft TOC	BORING NO.: MW-2
DRILLING AGENCY	Clear Heart, LLC	DRILLER: Don		DATE STARTED / DATE FINISHED: 3 Dec 99 → 3 Dec 99	
DRILLING EQUIPMENT	DR 10K Truck-mounted Drill Rig			COMPLETION DEPTH: 21.5 ft	SAMPLER: Modif. Split Spoon & Pin
DRILLING METHOD	Hollow Stem Auger	BORING DIA.: 8 inch O.D.		NO. OF SAMPLES: 3 Soil	
SIZE AND TYPE OF CASING	2-inch PVC	FROM 0.0' TO 20.0'		WATER LEVEL: FIRST 10 ft	MEASURED / SAMPLED: None/None
TYPE OF PERFORATION	0.01 Slotted	FROM 5.0' TO 20.0'		CORE BARREL: 2.5"/1.5" ϕ	LENGTH: 18 inches
SIZE AND TYPE OF PACK	#2/12 Sand	FROM 4.0' TO 21.5'		LOGGED BY: JC	CHECKED BY: CYP
TYPE OF SEAL	NO. 1 Bentonite	FROM 2.0' TO 4.0'		COMMENTS: Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm). Blows by 40 lb hammer, 40 inch drop.	
	NO. 2 Cement Grout	FROM 0.0' TO 2.0'			

DEPTH (feet)	Samples	Sample ID	PID	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt, 3 inches thick.		Christy Box
					SANDY CLAYEY GRAVEL (GC), yellowish brown (10YR 5/6), moist. [Fill]	GC	Grout
					CLAYEY GRAVEL (GC), light olive brown (2.5Y 5/4), damp, very dense, 50% gravel 30% clay, 20% fine-grained sand; appears to be fill.	GC	2" PVC
5		6.0	0	75			Bentonite
					▼ Olive gray (5Y 5/2), wet.		
10		11.0	0	8	CLAY (CL), very dark gray (5Y 5/2), moist, stiff, organic material.	CL (Bay Mud)	0.010 Well Screen
15		16.0	0	5			Sand
20			0	4	⊥ Lens of coarse-grained sand (pin sampler), 2 inches thick.		
					TD: 21.5 ft bgs Note: Well installed from grade to 20 ft bgs.		

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LOG OF MONITORING WELL MW-2

Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 9

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	EC&A, Cheri Page	February 2000		1 of 1

(TRACE #179/RG/8Mar00)

BORING LOCATION	6995 Redwood Blvd. (south of former UST)	ELEVATION AND DATUM	10.90 ft TOC
BORING NO.	MW-3		
DRILLING AGENCY	Clear Heart, LLC	DRILLER	Don
DATE STARTED / DATE FINISHED	3 Dec 99 → 3 Dec 99		
DRILLING EQUIPMENT	DR 10K Truck-mounted Drill Rig	COMPLETION DEPTH	21.5 ft
SAMPLER	Modif. Split Spoon & Pin		
DRILLING METHOD	Hollow Stem Auger	BORING DIA.	8 inch O.D.
NO. OF SAMPLES	2 Soil		
SIZE AND TYPE OF CASING	2-inch PVC	FROM 0.0' TO 20.0'	WATER LEVEL FIRST: None; MEASURED / SAMPLED: None/None
TYPE OF PERFORATION	0.01 Slotted	FROM 5.0' TO 20.0'	CORE BARREL: 2.5"/1.5" ϕ; LENGTH: 18 inches
SIZE AND TYPE OF PACK	#2/12 Sand	FROM 4.0' TO 21.5'	LOGGED BY: JC; CHECKED BY: CYP
TYPE OF SEAL	NO. 1 Bentonite	FROM 2.0' TO 4.0'	COMMENTS: Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm). Blows by 40 lb hammer, 40 inch drop.
	NO. 2 Cement Grout	FROM 0.0' TO 2.0'	

DEPTH (feet)	Samples	Sample ID	PID	Blows	MATERIAL DESCRIPTION	USCS	WELL CONSTRUCTION
					Asphalt, two 3-inch layers, pieces of concrete.		Christy Box
					CLAYEY GRAVEL (GC), dark yellowish brown (10YR 4/6), moist; appears to be fill.	GC	Grout
			0		▼ Light olive gray (5Y 5/2), increasing gravel, less clay.		Bentonite
5				30	Note: No recovery.		2" PVC
			0		SANDY CLAY (CL), olive gray (2.5Y 5/2), moist, 60% clay, 30% fine-grained sand, 10% gravel.	CL	
10		11.0		4	SILTY CLAY (CL), dark gray (N4 /) with black mottling, wet, soft; organic material.	CL (Bay Mud)	0.010 Well Screen
15		16.0		5	▼ Stiff, moist, boring dry at 15 ft .		Sand
20				5	▼ Gravel Lens, wet (pin sampler).		
					TD: 21.5 ft bgs Note: Well installed from grade to 20 ft bgs.		

(TRACE #179/RG/9Mar00)

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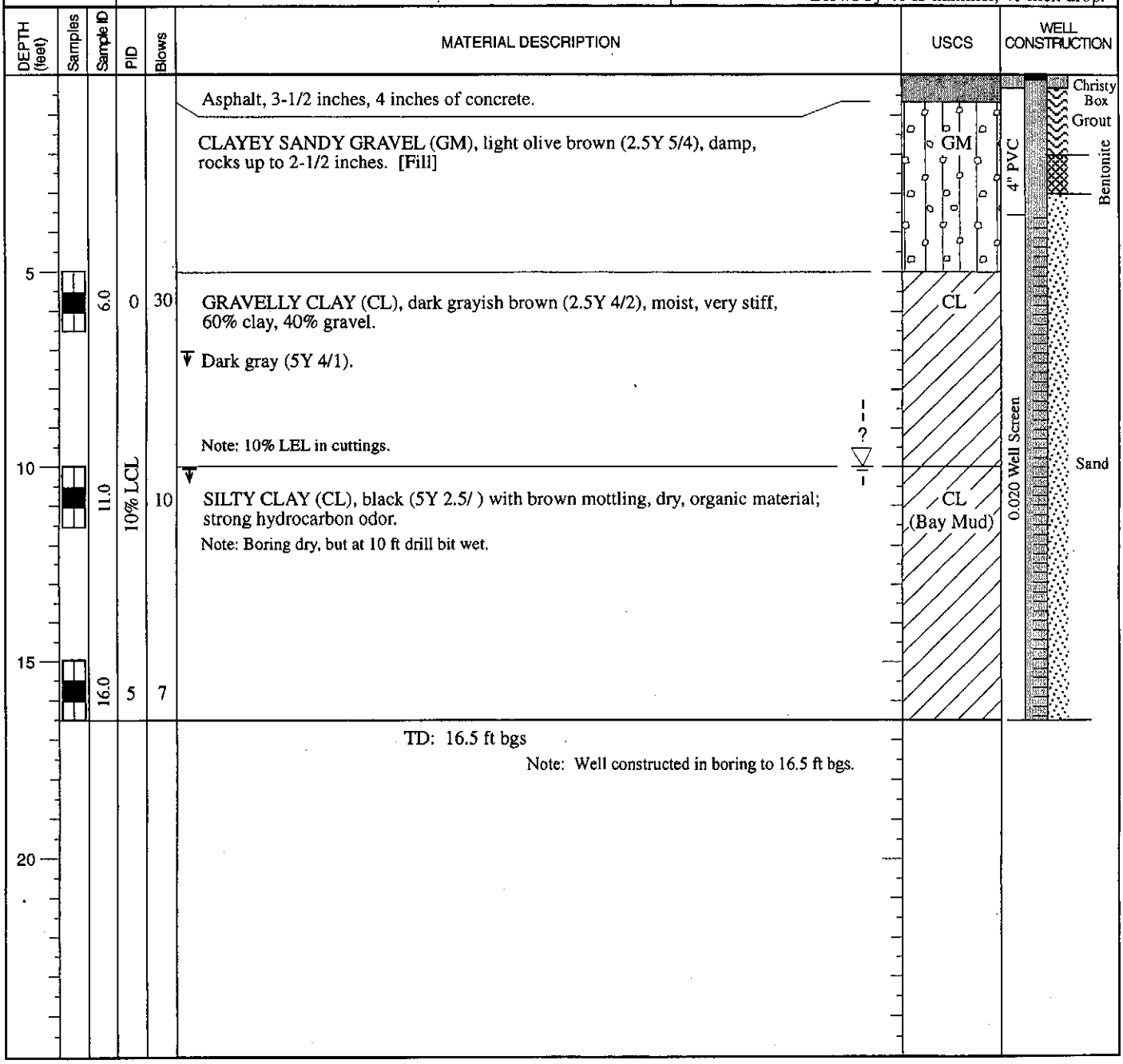
LOG OF MONITORING WELL MW-3

Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE
10

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	EC&A, Cheri Page	February 2000		1 of 1

BORING LOCATION	6995 Redwood Blvd. (between former UST and boring B-3)			ELEVATION AND DATUM: Ground level	BORING NO.: MW-4
DRILLING AGENCY	Clear Heart, LLC	DRILLER: Don		DATE STARTED / DATE FINISHED	10 Dec 99 → 10 Dec 99
DRILLING EQUIPMENT	DR 10K Truck-mounted Drill Rig			COMPLETION DEPTH: 16.5 ft	SAMPLER: Modif. Split Spoon & Pin
DRILLING METHOD	Hollow Stem Auger	BORING DIA.: 11 inch O.D.		NO. OF SAMPLES: 3 Soil	
SIZE AND TYPE OF CASING	4-inch PVC	FROM 0.0' TO 16.5'		WATER LEVEL: FIRST 10 ft bgs ?	MEASURED / SAMPLED: None/None
TYPE OF PERFORATION	0.02 Circumslot ™	FROM 3.5' TO 16.5'		CORE BARREL: 2.5" ϕ	LENGTH: 18 inches
SIZE AND TYPE OF PACK	#2/12 Sand	FROM 3.0' TO 16.5'		LOGGED BY: JC	CHECKED BY: CYP
TYPE OF SEAL: NO. 1	Bentonite	FROM 2.0' TO 3.0'		COMMENTS: Soil samples field screened with Photo-Ionization Detector (PID), results in parts per million (ppm). Blows by 40 lb hammer, 40 inch drop.	
TYPE OF SEAL: NO. 2	Cement Grout	FROM 0.0' TO 2.0'			



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ENVIRONMENTAL CONSULTANTS

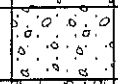
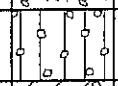
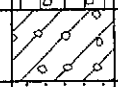
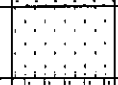
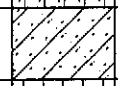
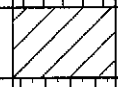
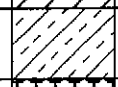
LOG OF MONITORING WELL MW-4
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE 11

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0306,001.97	EC&A, Cheri Page	February 2000		1 of 1

(TRACE #179/RG/9Mar00)

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS LESS THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

- No Soil Sample Attempted
- Sample Observed but Not Retained
- No Recovery in Sampler
- Sample Submitted for Laboratory Analysis -- Sample Depth is Bottom of Sample
- 21 — Blows/Foot: Blows Required to Drive Sampler One Foot Using Hammer Weight of 140 Pounds Falling 30 Inches

- 2.5 YR 6/2 — Soil Color according to Munsell Soil Color Charts (1975 Edition)
- First Encountered Saturated Soil
- Measured Ground Water Level
- Estimated Boundary Between Lithologic Units
- Estimated Gradational Boundary Between Lithologic Units

(TRACE PDFform,15Feb00)

EDD CLARK & ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS

USCS LOG SYMBOLS
Novato Ford
6995 Redwood Boulevard
Novato, California

PLATE
6

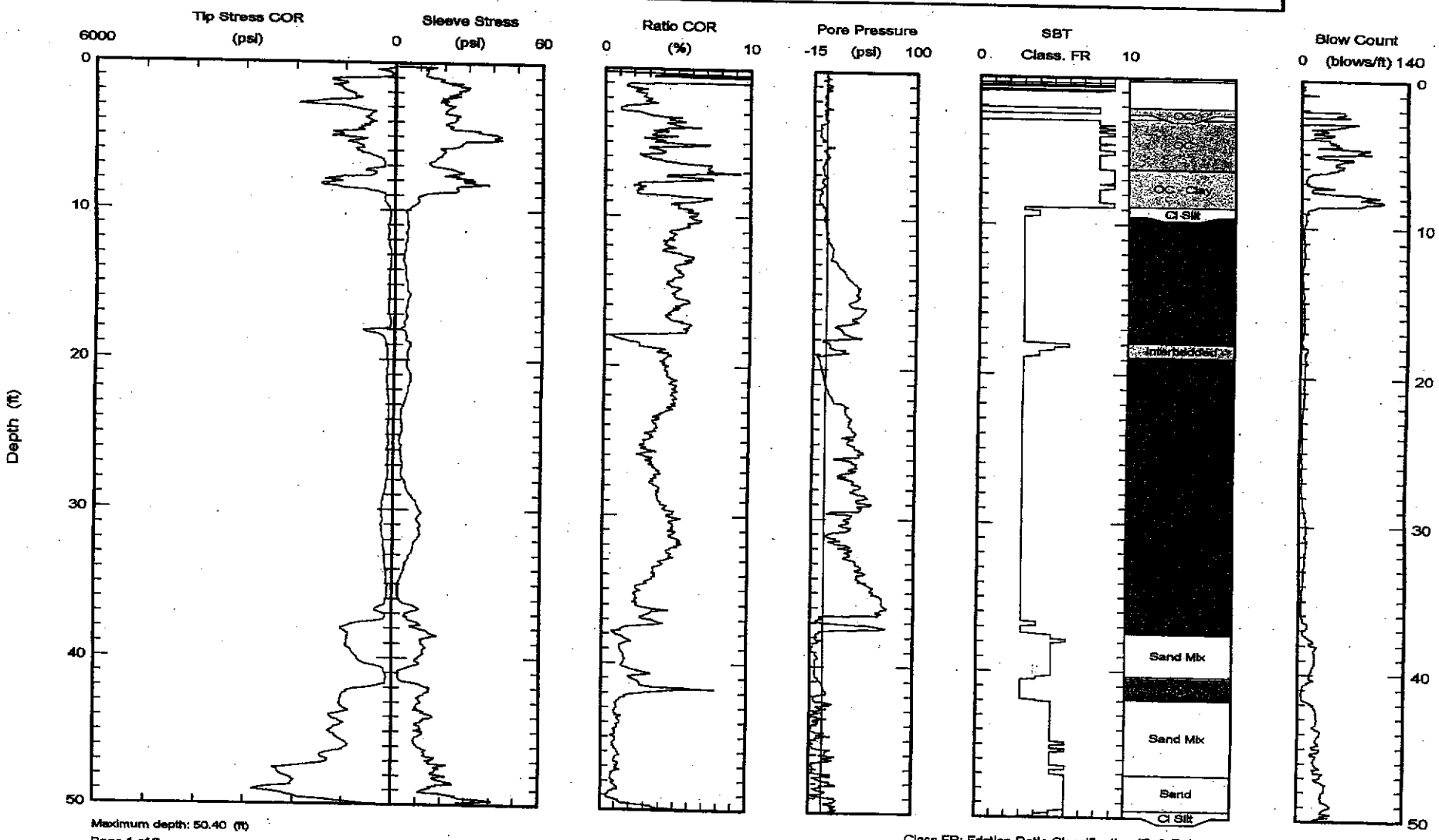
JOB NUMBER	REVIEWED BY	DATE	REVISED
0306,001.97		March 2000	

Precision Sampling Inc.
Richmond, Ca 94804
510-237-4575
Email: chris@precisionsampling.com
http://www.precisionsampling.com

Northing:
Easting:
Elevation:

Date: 02/Apr/2003
Test ID: cpt-01
Project: EddClark

Client: EddClark
Site: Novato Ford



Maximum depth: 50.40 (ft)
Page 1 of 2

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

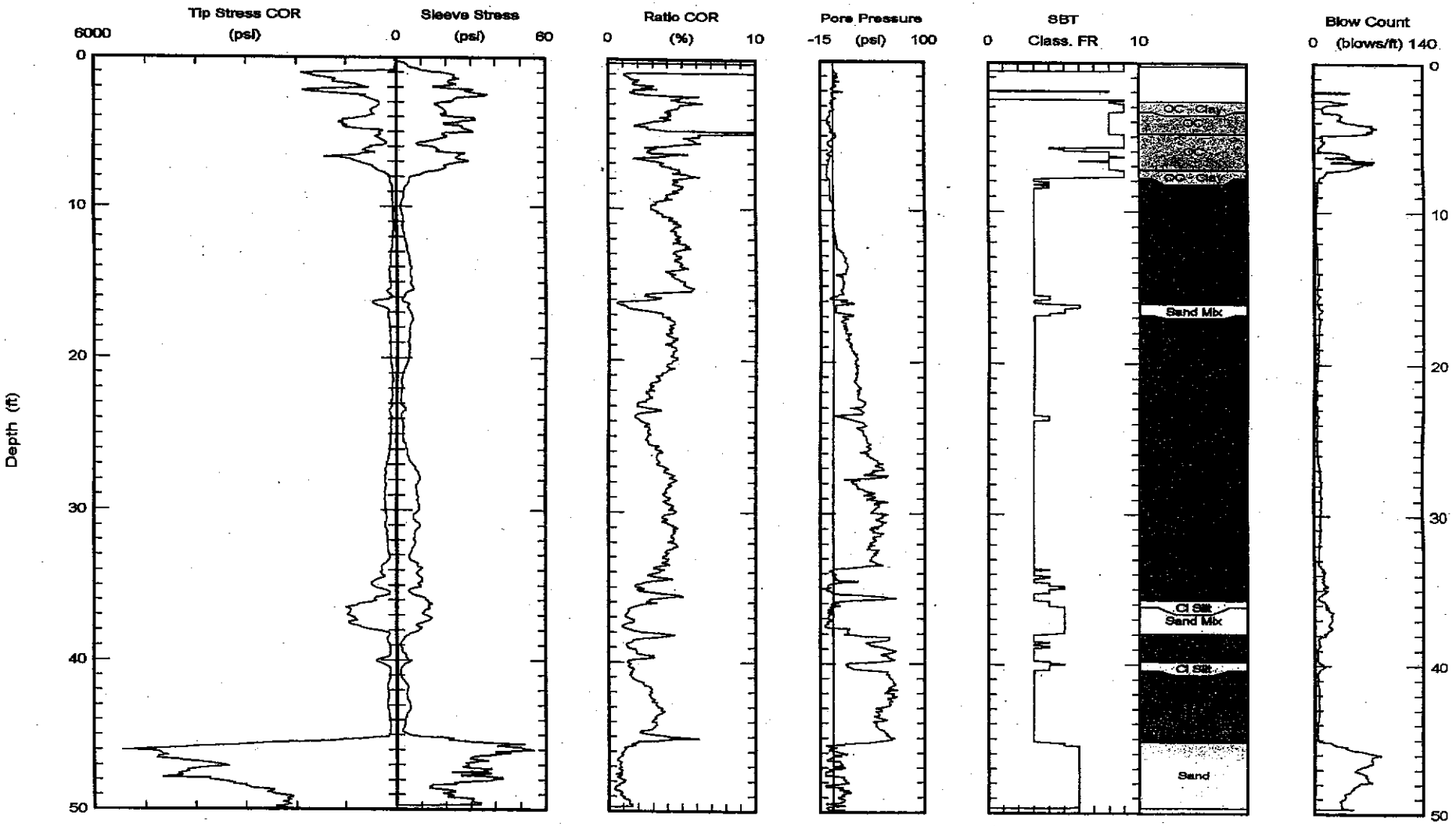
Test ID: cpt-01
File: CP202A0303C.ECP

Precision Sampling Inc.
Richmond, Ca 94804
510-237-4575
Email: chris@precisionsampling.com
http://www.precisionsampling.com

Northing:
Easting:
Elevation:

Date: 03/Apr/2003
Test ID: cpt-02
Project: EddClark

Client: EddClark
Site: Novato Ford



Maximum depth: 50.03 (ft)

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

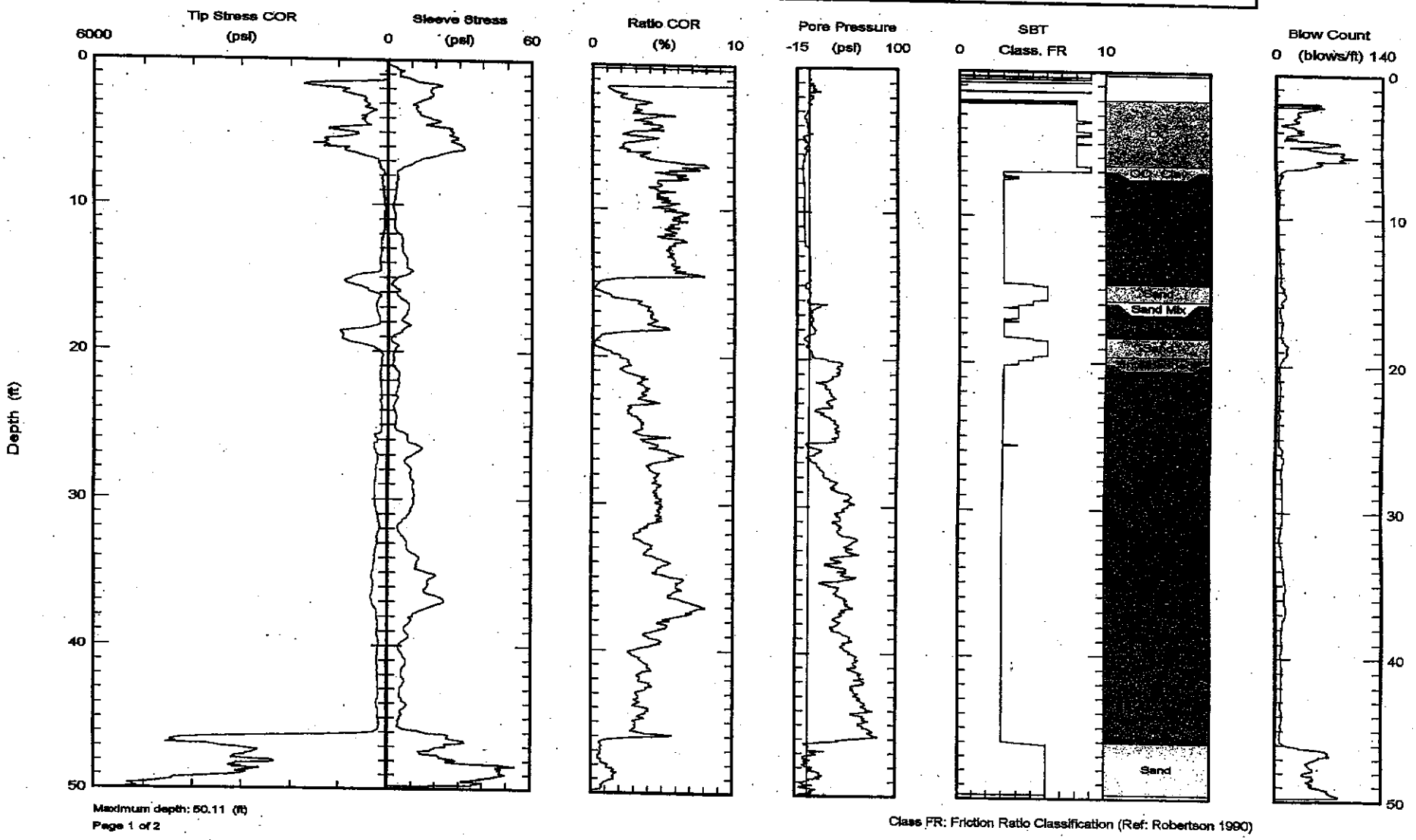
Test ID: cpt-02
File: CP203A0301C.ECP

Precision Sampling Inc.
Richmond, Ca 94804
510-237-4575
Email: chris@precisionsampling.com
http://www.precisionsampling.com

Northing:
Easting:
Elevation:

Date: 02/Apr/2003
Test ID: cpt-03
Project: EddClark

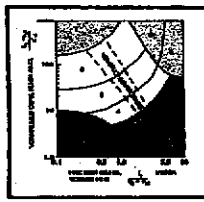
Client: EddClark
Site: Novato Ford



Maximum depth: 50.11 (ft)

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Test ID: cpt-03
File: CP202A0301C.ECP

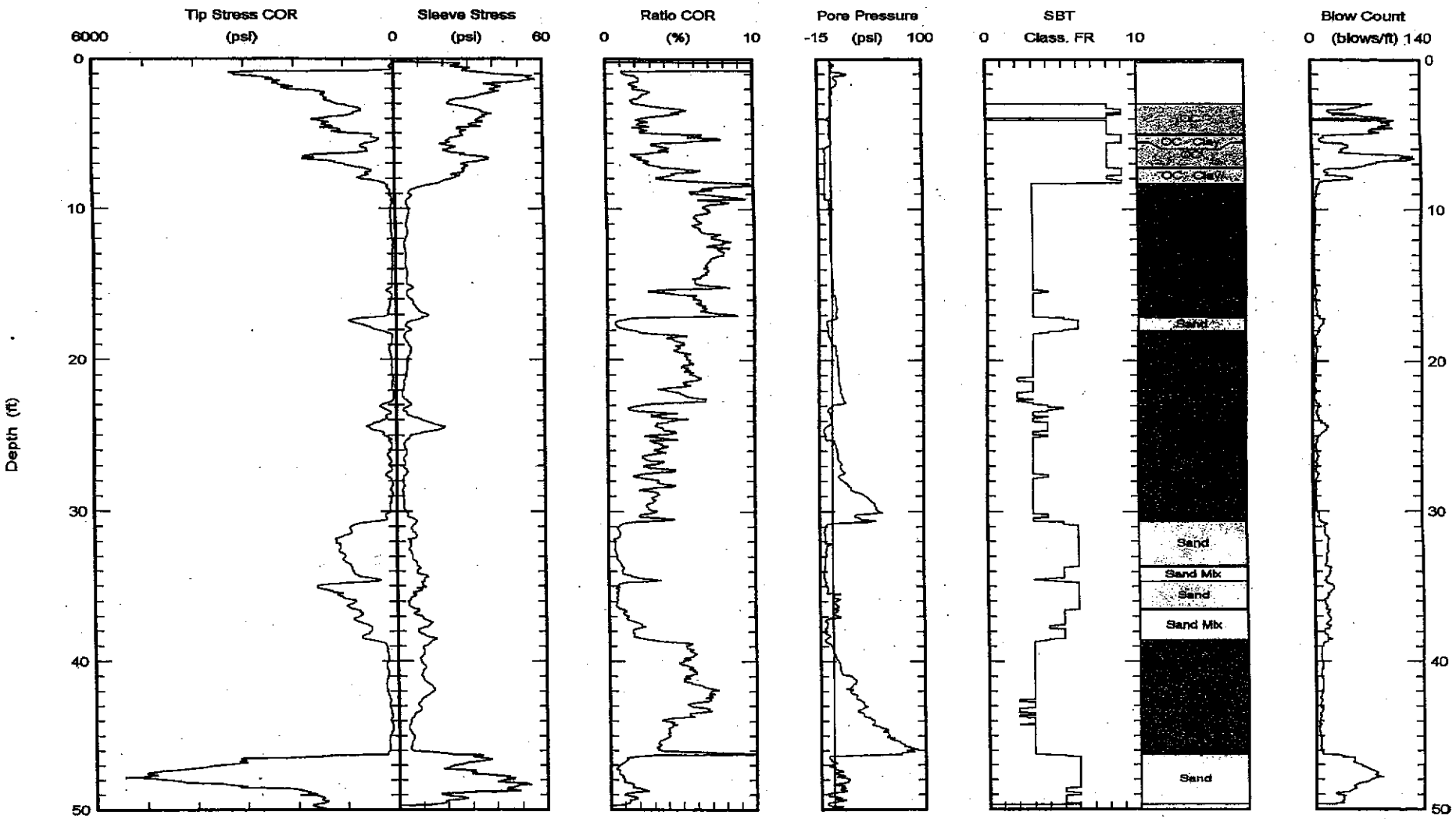


Precision Sampling Inc.
Richmond, Ca 94804
510-237-4575
Email: chris@precisionsampling.com
http://www.precisionsampling.com

Northing:
Easting:
Elevation:

Date: 02/Apr/2003
Test ID: cpt-04
Project: EddClark

Client: EddClark
Site: Novato Ford



Maximum depth: 50.05 (ft)

Class FR: Friction Ratio Classification (Ref: Robertson 1990)

Test ID: cpt-04
File: CP202A0302C.ECP